

BOREHOLE LOG



WS04

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 10 February 2016

Scale 1 : 50

End Date 10 February 2016

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
10/02/16 0800hrs	1B	0.40 - 0.50					Grass over soft brown silty CLAY. Frequent rootlets.	0.05		
	1ES	0.40 - 0.50					Soft orangish brown slightly gravelly CLAY. Gravel is angular and subangular fine to coarse flint. Frequent rootlets and roots (up to 5mm diam).			
	2B	1.00 - 1.10								
	2ES	1.00 - 1.10								
	3D	1.20 - 1.65	Nil	S 10			1.00 - 1.20m: Frequent subrounded fine to coarse chalk gravel.	1.20		
	4L	1.20 - 2.00	1.20				1.20m: Flint cobble, recovered non intact.			
	3ES	1.90 - 2.00					Structureless CHALK composed of white gravelly SILT. Gravel is angular to subrounded fine to coarse weak medium density white locally stained light brown chalk. (Probable CIRIA Grade Dm)			
	5D	2.00 - 2.45	2.00	S 15			1.80 - 1.90m: Locally stained yellow.			
	6L	2.00 - 3.00						2.70		
	4ES	2.90 - 3.00					Structureless CHALK composed of slightly sandy silty angular to subrounded fine to coarse GRAVEL. Clasts are weak medium density white with rare black specks (up to 1mm) chalk. Matrix is white locally stained yellow. (Probable CIRIA Grade Dc)			
7D	3.00 - 3.45	2.00	S 27			3.40 - 3.60m: Rare angular medium and coarse flint gravel.				
8L	3.00 - 4.00									
5ES	3.90 - 4.00					4.00 - 5.00m: Fine and medium chalk gravel.				
9D	4.00 - 4.45	2.00	S 26			4.40 - 4.50m: Locally stained yellow.				
10L	4.00 - 5.00									
10/02/16 0945hrs Dry	6ES	4.90 - 5.00	2.00	S 20				5.45		
	11D	5.00 - 5.45	2.00				Borehole completed at 5.45m.			
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-3.00m, (84mm) 3.00-4.00 and (74mm) 4.00-5.00m.
 CASING: 113mm diam to 2.00m.
 BACKFILL: On completion, hole backfilled with bentonite pellets 5.00-0.50m and arisings 0.50-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT 31634	CHECKED CT
				Groundwater not encountered.			

BOREHOLE LOG



WS105

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631214.9

Scale 1 : 50

End Date 11 February 2016

Northing 145145.7 Ground level 101.80mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
11/02/16 1300hrs						✓	Grass over soft brown silty CLAY.	0.05	101.75	---
	1B 1ES	0.40 - 0.50 0.40 - 0.50					Soft orangish brown silty CLAY with rare pockets (up to 10mm) of dark brown clay. Rare rootlets.			---x---
	2B 2ES	1.00 - 1.10 1.00 - 1.10								---x---
	3D 4L	1.20 - 1.65 1.20 - 2.00	Nil 1.20	S 5						---x---
	3ES 5D 6L	1.90 - 2.00 2.00 - 2.45 2.00 - 3.00	2.00	S 8						---x---
	4ES 7D 8L	2.90 - 3.00 3.00 - 3.45 3.00 - 4.00	3.00	S 8			Firm orangish brown slightly gravelly CLAY with frequent black specks (up to 4mm). Gravel is angular and subangular fine to coarse flint.	2.60	99.20	---x---
	5ES 9D 10L	3.90 - 4.00 4.00 - 4.45 4.00 - 5.00	3.00	S 6			3.35m: Flint cobble, recovered non intact. Structureless CHALK composed of brownish white slightly gravelly SILT with abundant pockets (30mm) of brown clay and abundant black specks (up to 1mm). Gravel is angular to subrounded fine to coarse very weak to weak low and medium density white chalk. (Probable CIRIA Grade Dm)	3.50	98.30	---x---
	6ES 11D	4.90 - 5.00 5.00 - 5.45	3.00	S 7			3.60m: Rinded flint cobble. 3.80 - 4.00m: Mottled brown. 4.50 - 4.70m: Mottled brown. Structureless CHALK composed of white slightly sandy SILT with rare subrounded fine and medium chalk gravel and frequent black specks (up to 1mm). (Probable CIRIA Grade Dm)	4.80	97.00	---x---
11/02/16 1500hrs Dry							Borehole completed at 5.45m.	5.45	96.35	---x---
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-3.50m, bentonite seal 3.50-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



CONTRACT
31634

CHECKED
CT

BOREHOLE LOG



CLIENT WSP GROUP

WS106

SITE WHITFIELD

Sheet 1 of 1

Start Date 9 February 2016

Easting 631293.2

Scale 1 : 50

End Date 9 February 2016

Northing 145220.1 Ground level 99.60mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
09/02/16 1145hrs	1B	0.40 - 0.50					Grass over soft brown silty CLAY with rare angular fine to coarse flint gravel.	0.15	99.45	
	1ES	0.40 - 0.50					Soft orangish brown gravelly silty CLAY. Gravel is angular to rounded fine to coarse flint.			
	2B	1.00 - 1.10								
	2ES	1.00 - 1.10								
	3D	1.20 - 1.65		Nil	S 7					
	4L	1.20 - 2.00		1.20						
	3ES	1.90 - 2.00						1.70	97.90	
	5D	2.00 - 2.45		2.00	S 4		Soft becoming firm brown gravelly locally very gravelly CLAY. Gravel is angular to subrounded fine to coarse flint.			
	6L	2.00 - 3.00								
	4ES	2.90 - 3.00								
7D	3.00 - 3.45		3.00	S 7		2.70 - 3.00m: Frequent subrounded fine and medium chalk gravel.	3.00	96.60		
8L	3.00 - 4.00					2.70m: Cobble sized black nodular flint, recovered non intact.				
09/02/16 1230hrs Dry	5ES	3.90 - 4.00					Structureless CHALK composed of slightly sandy silty subangular and subrounded fine to coarse GRAVEL. Clasts are medium strong medium density white with frequent black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc)			
	9D	4.00 - 4.45		3.00	S 10		3.00 - 3.40m: Locally stained yellow.			
	10L	4.00 - 5.00					3.65 - 3.70m: Stained yellow.			
	6ES	4.90 - 5.00		3.00	S 13		3.90m: Cobble sized black nodular flint.			
	11D	5.00 - 5.45					4.55 - 4.60m: Locally stained yellow.			
							4.70m: Subrounded chalk cobble.			
							4.90m: Orange stained subangular medium flint gravel.	5.45	94.15	
							Borehole completed at 5.45m.			
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-3.00m, bentonite seal 3.00-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT 31634	CHECKED CT
				Groundwater not encountered.			

BOREHOLE LOG



CLIENT WSP GROUP

WS107

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631165.6

Scale 1 : 50

End Date 11 February 2016

Northing 145214.6 Ground level 106.65mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend	
11/02/16 1000hrs						✓	Grass over soft brown silty CLAY.	0.10	106.55	X	
	1B	0.40 - 0.50					Soft orangish brown silty CLAY.			X	
	1ES	0.40 - 0.50								X	
	2B	1.00 - 1.10								X	
	2ES	1.00 - 1.10								X	
	3D	1.20 - 1.65		Nil	S 5					X	
	4L	1.20 - 2.00		1.20				1.50	105.15	X	
	3ES	1.70 - 1.80					Soft becoming firm orangish brown locally mottled dark brown slightly gravelly CLAY. Gravel is angular fine to coarse flint.	1.95	104.70	X	
	5D	2.00 - 2.45		2.00	S 9					X	
	6L	2.00 - 3.00					Structureless CHALK composed of slightly sandy silty angular and subangular fine to coarse GRAVEL. Clasts are weak and medium strong medium density white chalk. Matrix is white locally stained orange. (Probable CIRIA Grade Dc). 2.20m: Flint cobble, recovered non intact. 2.80m: Flint cobble, recovered non intact.			X	
11/02/16 1200hrs Dry	4ES	2.90 - 3.00					3.40 - 3.70m: Locally stained yellow.			X	
	7D	3.00 - 3.45		3.00	S 10		3.65m: Rinded flint cobble.			X	
	8L	3.00 - 4.00								X	
	5ES	3.90 - 4.00								X	
	9D	4.00 - 4.45		3.00	S 12		Structureless CHALK composed of white slightly sandy gravelly SILT. Gravel is angular to subrounded fine to coarse very weak to weak low and medium density white chalk. (Probable CIRIA Grade Dm) 4.60 - 5.00m: Rare subrounded fine to coarse flint gravel.	4.00	102.65	X	
	10L	4.00 - 5.00								X	
	6ES	4.90 - 5.00								X	
	11D	5.00 - 5.45		3.00	S 9			5.45	101.20	X	
								Borehole completed at 5.45m.			X
									{8.00}		X

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-2.00m, bentonite seal 2.00-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks
 Groundwater not encountered.



CONTRACT
31634

CHECKED
CT

BOREHOLE LOG



WS108

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631218.8

Scale 1 : 50

End Date 11 February 2016

Northing 145226.0 Ground level 103.45mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend	
11/02/16 0800hrs						✓	Grass over soft brown silty CLAY.	0.05	103.40	[Symbol]	
	1B	0.40 - 0.50					Soft orangish brown silty CLAY with rare angular to rounded fine to coarse flint and chalk gravel.			[Symbol]	
	1ES	0.40 - 0.50								[Symbol]	
	2B	1.00 - 1.10								[Symbol]	
	2ES	1.00 - 1.10								[Symbol]	
				Nil	S 4						
	3D	1.20 - 1.65		1.20						[Symbol]	
	4L	1.20 - 2.00								[Symbol]	
								1.70m: Pocket (50mm) of brown sandy CLAY.			[Symbol]
	3ES	1.90 - 2.00								[Symbol]	
5D	2.00 - 2.45		2.00	S 7					[Symbol]		
6L	2.00 - 3.00								[Symbol]		
							2.20m: Flint cobble. 2.20 - 2.50m: Rare angular medium and coarse flint gravel.			[Symbol]	
4ES	2.90 - 3.00						2.50 - 2.70m: Rare black specks (up to 5mm). Mottled dark brown.	2.80	100.65	[Symbol]	
7D	3.00 - 3.45		3.00	S 9			2.70m: Rinded flint cobble, recovered non intact.			[Symbol]	
8L	3.00 - 4.00						Structureless CHALK composed of white slightly sandy slightly gravelly SILT. Gravel is angular to subrounded fine to coarse weak low density white chalk and rare flint. (Probable CIRIA Grade Dm)	3.50	99.95	[Symbol]	
							3.20 - 3.50m: Locally stained yellow.			[Symbol]	
							Structureless CHALK composed of slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are weak medium density white locally with frequent black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc)	4.55	98.90	[Symbol]	
							3.70 - 3.80m: Rare angular coarse flint gravel.			[Symbol]	
							Structureless CHALK composed of white with frequent black specks (up to 2mm) slightly gravelly SILT. Gravel is angular to subrounded fine to coarse very weak low density white chalk. (Probable CIRIA Grade Dm)	5.45	98.00	[Symbol]	
							4.55 - 4.60m: Band of dark orange gravelly coarse sand. Gravel is angular fine and medium flint.			[Symbol]	
							Borehole completed at 5.45m.			[Symbol]	
								{8.00}			

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-3.00m, (84mm) 3.00-4.00m and (74mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-2.80m, bentonite seal 2.80-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT 31634	CHECKED CT
				Groundwater not encountered.			

BOREHOLE LOG



CLIENT WSP GROUP

WS109

SITE WHITFIELD

Sheet 1 of 1

Start Date 8 February 2016

Easting 631351.7

Scale 1 : 50

End Date 9 February 2016

Northing 145320.0 Ground level 98.50mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
08/02/16 1315hrs	1B	0.40 - 0.50					Grass over soft brown silty CLAY. Rare rootlets.	0.05	98.45	
	1ES	0.40 - 0.50					Soft orangish brown slightly gravelly silty CLAY. Gravel is angular to rounded fine to coarse flint.			
	2B	1.00 - 1.10								
	2ES	1.00 - 1.10								
08/02/16 1700hrs Dry	3D	1.20 - 1.65	Nil	S 5						
	4L	1.20 - 2.00	1.20							
	3ES	1.90 - 2.00								
09/02/16 0800hrs Dry	5D	2.00 - 2.45	2.00	S 11						
	6L	2.00 - 3.00						2.40	96.10	
09/02/16 0930hrs Dry	4ES	2.90 - 3.00					Firm brown very gravelly CLAY. Gravel is angular and subangular fine to coarse flint.			
	7D	3.00 - 3.45	3.00	S 6				3.10	95.40	
	8L	3.00 - 4.00								
	5ES	3.90 - 4.00					Structureless CHALK composed of white gravelly SILT. Gravel is angular to subrounded fine to coarse weak medium density white locally stained orangish brown chalk. (Probable CIRIA Grade Dm). 3.55m: Rinded flint cobble. 3.80m: Flint cobble, recovered non intact.	3.90	94.60	
09/02/16 0930hrs Dry	D	4.00 - 4.45	3.00	S 10						
	9L	4.00 - 5.00					Structureless CHALK composed of slightly sandy silty subangular and subrounded fine to coarse GRAVEL. Clasts are weak medium density white locally with frequent black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc) 4.10m: Flint cobble, recovered non intact. 4.90m: Flint cobble.			
	6ES	4.90 - 5.00	3.00	S 8				5.45	93.05	
	10D	5.00 - 5.45					Borehole completed at 5.45m.			
								{8.00}		

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-3.00m, bentonite seal 3.00-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT 31634	CHECKED CT
				Groundwater not encountered.			

BOREHOLE LOG



CLIENT WSP GROUP

WS110

SITE WHITFIELD

Sheet 1 of 1

Start Date 9 February 2016

Easting 631249.5

Scale 1 : 50

End Date 9 February 2016

Northing 145306.6 Ground level 104.40mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
09/02/16 1330hrs	1B	0.40 - 0.50					Grass over soft brown silty CLAY. Rare rootlets.	0.10	104.30	
	1ES	0.40 - 0.50					Soft orangish brown silty CLAY with rare angular and subangular fine and medium flint gravel.			
	2B	1.00 - 1.10								
	2ES	1.00 - 1.10								
	3D	1.20 - 1.65		Nil	S 6					
	4L	1.20 - 2.00		1.20						
	3ES	1.90 - 2.00					Firm brown gravelly CLAY. Gravel is angular to subrounded fine to coarse flint.	1.60	102.80	
	5D	2.00 - 2.45		2.00	S 5		1.90 - 2.00m: Slightly gravelly.	2.00	102.40	
	6L	2.00 - 3.00					Structureless CHALK composed of slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are weak low and medium density white with frequent black specks (up to 2mm) chalk. (Probable CIRIA Grade Dc). 2.20m: Rinded flint cobble, recovered non intact.			
	4ES	2.90 - 3.00					3.20m: Rinded flint cobble, recovered non intact.			
7D	3.00 - 3.45					3.60m: Subrounded chalk cobble.				
8L	3.00 - 4.00					3.70m: Subrounded chalk cobble.				
5ES	3.90 - 4.00					4.50 - 4.70m: Rare subrounded medium flint gravel.				
9D	4.00 - 4.45					4.80 - 4.90m: Locally stained yellow.				
10L	4.00 - 5.00									
09/02/16 1530hrs Dry	6ES	4.90 - 5.00								
	11D	5.00 - 5.45								
								5.45	98.95	
							Borehole completed at 5.45m.			

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-2.00m, bentonite seal 2.00-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

	CONTRACT	CHECKED
	31634	CT

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:21 AM RE

BOREHOLE LOG



WS111

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 9 February 2016

Easting 631312.7

Scale 1 : 50

End Date 9 February 2016

Northing 145354.5 Ground level 101.70mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend	
09/02/16 0930hrs	1B 1ES	0.40 - 0.50					Grass over soft brown silty CLAY with rare angular coarse flint gravel.	0.10	101.60		
		0.40 - 0.50					Soft orangish brown silty CLAY.				
	2B 2ES	1.00 - 1.10									
		1.00 - 1.10									
	3D 4L	1.20 - 1.65		Nil	S 4			Soft dark brown slightly gravelly CLAY. Gravel is angular fine to coarse flint.	1.20		100.50
		1.20 - 2.00	1.20								
	3ES 5D 6L	1.90 - 2.00						Structureless CHALK composed of brownish white slightly sandy slightly gravelly SILT. Gravel is subangular and subrounded fine to coarse very weak and weak low density white chalk. (Probable CIRIA Grade Dm). 1.80 - 1.85m: Mottled brown.	1.50		100.20
		2.00 - 2.45	2.00		S 5				1.90		99.80
		2.00 - 3.00									
	4ES 7D 8L	2.90 - 3.00						Structureless CHALK composed of slightly sandy silty subangular to rounded fine to coarse GRAVEL. Clasts are weak medium density white locally with frequent black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc) 2.50 - 2.60m: Rare subrounded medium flint gravel. 2.75 - 2.80m: Locally stained yellow.			
3.00 - 3.45		3.00		S 9							
3.00 - 4.00											
5ES 9D 10L	3.90 - 4.00						3.70m: Subrounded chalk cobble.				
	4.00 - 4.45	3.00		S 11			3.90 - 4.00m: Locally stained yellow.	4.20	97.50		
	4.00 - 5.00										
09/02/16 1100hrs Dry	6ES 11D	4.90 - 5.00					Structureless CHALK composed of white slightly sandy slightly gravelly SILT. Gravel is subangular and subrounded fine to coarse very weak low density white chalk. (Probable CIRIA Grade Dm) 4.40m: Flint cobble, recovered non intact. 4.90 - 5.00m: Yellowish white.				
		5.00 - 5.45	3.00	S 16				5.45	96.25		
Borehole completed at 5.45m.											

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-1.50m, bentonite seal 1.50-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT 31634	CHECKED CT
				Groundwater not encountered.			

BOREHOLE LOG



WS112

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 8 February 2016

Easting 631375.4

Scale 1 : 50

End Date 8 February 2016

Northing 145432.1 Ground level 99.30mOD

Depth 5.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
08/02/16 1015hrs	1B	0.40 - 0.50					Grass over soft brown silty CLAY.	0.10	99.20	
	1ES	0.40 - 0.50					Soft orangish brown slightly gravelly silty CLAY. Gravel is angular and subangular fine to coarse flint.			
	2B	1.00 - 1.10						1.00	98.30	
	2ES	1.00 - 1.10								
	3D	1.20 - 1.65	Nil	S 4			Structureless CHALK composed of brownish white gravelly SILT. Gravel is subangular and subrounded fine to coarse very weak low density white locally with frequent black specks (up to 1mm) chalk. (Probable CIRIA Grade Dm).			
	4L	1.20 - 2.00	1.20				1.30 - 1.40m: Flint cobble, recovered non intact. 1.55m: Rinded flint cobble. 1.65m: Subangular chalk cobble. 2.20 - 2.40m: Locally stained yellow. 2.30m: Rinded flint cobble.	2.50	96.80	
	3ES	1.90 - 2.00								
	5D	2.00 - 2.45	2.00	S 9						
	6L	2.00 - 3.00								
	4ES	2.90 - 3.00					Structureless CHALK composed of slightly sandy silty subrounded and rounded fine to coarse GRAVEL. Clasts are weak low and medium density white with rare black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc)	3.35	95.95	
7D	3.00 - 3.45	3.00	S 28							
8L	3.00 - 4.00									
08/02/16 1215hrs Dry	5ES	3.90 - 4.00					Structureless CHALK composed of white slightly gravelly SILT. Gravel is subrounded fine and medium very weak low density white chalk. (Probable CIRIA Grade Dm)	3.60	95.70	
	9D	4.00 - 4.45	3.00	S 13			3.35 - 3.40m: Flint cobble, recovered non intact.			
	10L	4.00 - 5.00					Structureless CHALK composed of silty subrounded and rounded fine to coarse GRAVEL. Clasts are weak low and medium density white with rare black specks (up to 1mm) chalk. Matrix is white. (Probable CIRIA Grade Dc) 3.80 - 4.00m: Rare black specks (up to 2mm). 4.30 - 4.60m: Locally stained yellow.			
	6ES	4.90 - 5.00								
	11D	5.00 - 5.45	3.00	S 11				5.45	93.85	
Borehole completed at 5.45m.										

EQUIPMENT: Geotechnical Terrier 2000 rig.
 METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-4.00m and (84mm) 4.00-5.00m.
 CASING: 113mm diam to 3.00m.
 BACKFILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-1.00m, bentonite seal 1.00-0.20m, concrete stopcock and raised helmet cover 0.20-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



CONTRACT
31634

CHECKED
CT

STANDARD PENETRATION TEST



CLIENT WSP GROUP

SITE WHITFIELD

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive				test type	N	energy ratio (%)
					blows	pen (mm)	blows	pen (mm)					
BH01	2.70	3.15	Nil	Dry	2 4	75 75	4 4 5 6	75 75 75 75	S	19	75		
BH01	5.70	6.15	4.20	3.50	1 2	75 75	2 2 2 4	75 75 75 75	S	10	75		
BH01	8.70	9.15	4.20	4.70	4 5	75 75	6 6 7 10	75 75 75 75	S	29	75		
BH01	11.70	12.04	4.20	4.40	6 12	75 75	12 26 12	75 75 40	C	79	75		
BH01	14.20	14.54	4.20	2.70	5 8	75 75	15 24 11	75 75 35	C	81	75		
BH01	15.20	15.53	4.20	8.90	5 7	75 75	17 14 9	75 75 25	C	69	75		
BH02	1.20	1.65	Nil	Dry	7 9	75 75	10 10 11 12	75 75 75 75	C	43	75		
BH02	2.70	3.15	1.20	1.30	4 6	75 75	7 7 8 12	75 75 75 75	C	34	75		
BH02	4.20	4.65	1.20	2.90	8 9	75 75	7 7 8 7	75 75 75 75	C	29	75		
BH02	5.70	6.15	1.20	Dry	5 6	75 75	9 10 10 5	75 75 75 75	C	34	75		
BH02	7.20	7.65	5.70	2.89	5 7	75 75	10 10 15 14	75 75 75 75	C	49	75		
BH02	8.70	9.15	5.70	8.60	3 5	75 75	8 10 11 12	75 75 75 75	S	41	75		
BH02	10.20	10.65	5.70	Dry	5 10	75 75	10 11 11 12	75 75 75 75	C	44	75		
BH02	11.70	12.07	5.70	8.20	5 9	75 75	10 12 28	75 75 70	C	68	75		
BH02	13.20	13.49	5.70	9.70	6 15	75 75	18 32	75 65	C	107	75		
BH02	14.70	15.11	5.70	10.00	4 5	75 75	5 12 25 8	75 75 75 35	C	58	75		
BH03	2.70	3.15	Nil	Dry	1 2	75 75	3 2 2 3	75 75 75 75	C	10	75		
BH03	4.80	5.25	4.20	Dry	5 9	75 75	11 8 8 5	75 75 75 75	C	32	75		
BH03	6.30	6.75	4.20	3.80	2 3	75 75	6 8 9 9	75 75 75 75	C	32	75		
BH03	7.80	8.25	4.20	4.20	3 6	75 75	9 9 7 8	75 75 75 75	C	33	75		
BH03	9.30	9.75	4.20	3.40	3 7	75 75	7 9 9 10	75 75 75 75	C	35	75		
BH03	10.80	11.25	4.20	7.60	3 5	75 75	7 11 12 11	75 75 75 75	C	41	75		
BH03	12.30	12.75	4.20	8.50	3 4	75 75	8 10 17 9	75 75 75 75	C	44	75		
BH03	13.80	14.18	4.20	8.30	3 7	75 75	10 17 19 4	75 75 75 5	C	65	75		

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

CONTRACT 31634	CHECKED CT
--------------------------	----------------------

STANDARD PENETRATION TEST



CLIENT WSP GROUP

SITE WHITFIELD

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
					blows	pen (mm)	blows	pen (mm)			
BH03	15.30	15.65	4.20	7.65	7 11	75 75	13 17 20	75 75 50	C	75	75
WS01	1.20	1.65	Nil	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	75
WS01	2.00	2.45	2.00	Dry	1 0	75 75	0 0 0 1	75 75 75 75	S	1	75
WS01	3.00	3.45	2.00	Dry	1 3	75 75	3 1 1 1	75 75 75 75	S	6	75
WS01	4.00	4.45	2.00	Dry	0 0	75 75	0 0 0 1	75 75 75 75	S	1	75
WS01	5.00	5.45	2.00	Dry	2 2	75 75	2 2 1 1	75 75 75 75	S	6	75
WS03	1.20	1.65	Nil	Dry	5 3	75 75	2 2 1 2	75 75 75 75	S	7	75
WS03	2.00	2.45	2.00	Dry	1 1	75 75	2 2 3 3	75 75 75 75	S	10	75
WS03	3.00	3.45	2.00	Dry	2 2	75 75	2 1 2 6	75 75 75 75	S	11	75
WS03	4.00	4.45	2.00	Dry	6 5	75 75	4 4 2 3	75 75 75 75	S	13	75
WS03	5.00	5.45	2.00	Dry	5 6	75 75	4 3 4 4	75 75 75 75	S	15	75
WS04	1.20	1.65	Nil	Dry	4 3	75 75	3 2 2 3	75 75 75 75	S	10	75
WS04	2.00	2.45	2.00	Dry	2 3	75 75	4 4 4 3	75 75 75 75	S	15	75
WS04	3.00	3.45	2.00	Dry	7 8	75 75	7 7 6 7	75 75 75 75	S	27	75
WS04	4.00	4.45	2.00	Dry	6 8	75 75	10 5 6 5	75 75 75 75	S	26	75
WS04	5.00	5.45	2.00	Dry	6 6	75 75	5 5 5 5	75 75 75 75	S	20	75
WS105	1.20	1.65	Nil	Dry	0 1	75 75	1 1 1 2	75 75 75 75	S	5	75
WS105	2.00	2.45	2.00	Dry	1 1	75 75	2 2 2 2	75 75 75 75	S	8	75
WS105	3.00	3.45	3.00	Dry	1 2	75 75	2 2 2 2	75 75 75 75	S	8	75
WS105	4.00	4.45	3.00	Dry	1 1	75 75	1 1 2 2	75 75 75 75	S	6	75
WS105	5.00	5.45	3.00	Dry	3 4	75 75	2 1 2 2	75 75 75 75	S	7	75
WS106	1.20	1.65	Nil	Dry	1 1	75 75	1 2 2 2	75 75 75 75	S	7	75
WS106	2.00	2.45	2.00	Dry	1 2	75 75	1 1 1 1	75 75 75 75	S	4	75
WS106	3.00	3.45	3.00	Dry	3 3	75 75	2 2 1 2	75 75 75 75	S	7	75

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

CONTRACT	CHECKED
31634	CT

STANDARD PENETRATION TEST



CLIENT WSP GROUP

SITE WHITFIELD

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive				test type	N	energy ratio (%)						
					blows	pen (mm)	blows		pen (mm)										
WS106	4.00	4.45	3.00	Dry	4	3	75	75	2	3	3	2	75	75	75	75	S	10	75
WS106	5.00	5.45	3.00	Dry	2	4	75	75	3	3	3	4	75	75	75	75	S	13	75
WS107	1.20	1.65	Nil	Dry	1	2	75	75	1	1	1	2	75	75	75	75	S	5	75
WS107	2.00	2.45	2.00	Dry	1	2	75	75	2	2	2	3	75	75	75	75	S	9	75
WS107	3.00	3.45	3.00	Dry	4	3	75	75	3	2	2	3	75	75	75	75	S	10	75
WS107	4.00	4.45	3.00	Dry	3	3	75	75	2	4	3	3	75	75	75	75	S	12	75
WS107	5.00	5.45	3.00	Dry	3	3	75	75	2	3	2	2	75	75	75	75	S	9	75
WS108	1.20	1.65	Nil	Dry	1	2	75	75	1	1	1	1	75	75	75	75	S	4	75
WS108	2.00	2.45	2.00	Dry	2	1	75	75	2	2	1	2	75	75	75	75	S	7	75
WS108	3.00	3.45	3.00	Dry	2	2	75	75	2	2	2	3	75	75	75	75	S	9	75
WS108	4.00	4.45	3.00	Dry	2	3	75	75	3	4	13	11	75	75	75	75	S	31	75
WS108	5.00	5.45	3.00	Dry	4	4	75	75	3	3	3	3	75	75	75	75	S	12	75
WS109	1.20	1.65	Nil	Dry	1	1	75	75	1	2	1	1	75	75	75	75	S	5	75
WS109	2.00	2.45	2.00	Dry	4	4	75	75	3	3	3	2	75	75	75	75	S	11	75
WS109	3.00	3.45	3.00	Dry	2	2	75	75	1	1	2	2	75	75	75	75	S	6	75
WS109	4.00	4.45	3.00	Dry	4	2	75	75	2	2	3	3	75	75	75	75	S	10	75
WS109	5.00	5.45	3.00	Dry	1	1	75	75	2	1	2	3	75	75	75	75	S	8	75
WS110	1.20	1.65	Nil	Dry	1	2	75	75	2	2	1	1	75	75	75	75	S	6	75
WS110	2.00	2.45	2.00	Dry	2	1	75	75	1	1	1	2	75	75	75	75	S	5	75
WS110	3.00	3.45	3.00	Dry	2	3	75	75	3	1	2	2	75	75	75	75	S	8	75
WS110	4.00	4.45	3.00	Dry	2	2	75	75	2	2	3	4	75	75	75	75	S	11	75
WS110	5.00	5.45	3.00	Dry	4	5	75	75	4	3	3	4	75	75	75	75	S	14	75
WS111	1.20	1.65	Nil	Dry	2	1	75	75	1	1	1	1	75	75	75	75	S	4	75
WS111	2.00	2.45	2.00	Dry	1	1	75	75	1	2	1	1	75	75	75	75	S	5	75

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

CONTRACT	CHECKED
31634	CT

Geotechnical Engineering Limited
STANDARD PENETRATION TEST



CLIENT WSP GROUP
 SITE WHITFIELD

borehole no.	borehole depth (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive				test type	N	energy ratio (%)						
					blows	pen (mm)	blows		pen (mm)										
WS111	3.00	3.45	3.00	Dry	1	1	75	75	1	2	2	4	75	75	75	75	S	9	75
WS111	4.00	4.45	3.00	Dry	2	3	75	75	3	3	2	3	75	75	75	75	S	11	75
WS111	5.00	5.45	3.00	Dry	4	3	75	75	3	3	4	6	75	75	75	75	S	16	75
WS112	1.20	1.65	Nil	Dry	1	1	75	75	1	1	1	1	75	75	75	75	S	4	75
WS112	2.00	2.45	2.00	Dry	2	1	75	75	2	3	2	2	75	75	75	75	S	9	75
WS112	3.00	3.45	3.00	Dry	3	3	75	75	7	11	5	5	75	75	75	75	S	28	75
WS112	4.00	4.45	3.00	Dry	3	3	75	75	3	4	3	3	75	75	75	75	S	13	75
WS112	5.00	5.45	3.00	Dry	5	4	75	75	3	3	2	3	75	75	75	75	S	11	75

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. N values have not been subjected to any correction.
3. Test carried out using split spoon S, solid cone C.
4. Where full test drive not completed, linearly extrapolated N value reported.
5. <1 Denotes hammer self weight penetration (sank under own weight).
6. ** Denotes no effective penetration.

CONTRACT 31634	CHECKED CT
--------------------------	----------------------

TRIAL PIT LOG



IN01

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 10 February 2016

Easting 631408.9

Scale 1 : 25

End Date 10 February 2016

Northing 145491.1 Ground level 97.70mOD

Depth 2.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B			Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium flint and chalk. Frequent rootlets.	0.20	97.50	
				Structureless CHALK composed of white and light grey slightly gravelly SILT. Gravel is subrounded and subangular fine and medium weak low density white with rare angular coarse flint. (CIRIA Grade Dm)			
				Trial pit completed at 2.00m.	2.00	95.70	

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.55.x2.00x1.80m.
 Trial pit used for soakaway test from 1.25m to 1.90m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:49 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN02

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 9 February 2016

Easting 631386.4

Scale 1 : 25

End Date 9 February 2016

Northing 145369.8 Ground level 97.55mOD

Depth 2.95 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium flint and rare chalk. Frequent rootlets.	0.20	97.35	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular fine to coarse flint.			
				Trial pit completed at 2.95m.	2.95	94.60	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x2.95x2.80m.
 Trial pit used for soakaway test from 2.05m to 2.95m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:49 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT



TRIAL PIT LOG

IN03

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 12 February 2016

Easting 631467.1

Scale 1 : 25

End Date 12 February 2016

Northing 145332.7 Ground level 97.55mOD

Depth 2.50 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B			Grass over soft brown slightly gravelly silty CLAY. Gravel is angular and subangular fine to coarse flint and chalk.	0.20	97.35	
				Structureless CHALK composed of white and light grey slightly gravelly SILT. Gravel is subrounded and subangular fine and medium very weak low density white with rare angular coarse flint. (CIRIA Grade Dm)			
				1.50 - 2.50m: Rare angular and subangular rinded flint gravel.			
				Trial pit completed at 2.50m.	2.50	95.05	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.65x2.50x2.45m.
 Trial pit used for soakaway test from 1.47m to refusal at 2.50m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:50 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN04

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 12 February 2016

Easting 631490.6

Scale 1 : 25

End Date 12 February 2016

Northing 145326.2 Ground level 99.30mOD

Depth 2.50 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B			Grass over soft brown slightly gravelly silty CLAY. Gravel is angular and subangular fine to coarse flint and chalk. Frequent rootlets.	0.35	98.95	
				Structureless CHALK composed of white and light grey slightly gravelly SILT. Gravel is subrounded and rounded fine and medium very weak low density white with rare angular coarse flint. (CIRIA Grade Dm)			
				1.20 - 1.30m: Frequent angular and subangular rinded flint gravel.			
				Trial pit completed at 2.50m.	2.50	96.80	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.65x2.50x2.3m.
 Trial pit used for soakaway test from 1.47m to 2.50m.
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:50 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN05

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 10 February 2016

Easting 631455.9

Scale 1 : 25

End Date 10 February 2016

Northing 145183.7 Ground level 104.80mOD

Depth 2.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		1.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Frequent rootlets.	0.30	104.50	
				Structureless CHALK composed of white gravelly SILT. Gravel is subrounded and rounded fine to coarse very weak low density white with frequent black specks chalk, rarely angular coarse flint. (CIRIA Grade Dm)			
				Structureless CHALK composed of silty subangular to rounded fine to coarse GRAVEL with a low subangular cobble content. Clasts are very weak and weak low and medium density white with rare black specks and orange staining. Matrix is light brown. Medium spaced bands of cobble sized rinded nodular flint. (CIRIA Grade Dc)	1.10	103.70	
				Trial pit completed at 2.00m.	2.00	102.80	

Notes

Trial pit excavated by JCB 3CX tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.5.x2.00x1.90m.
 Trial pit used for soakaway test from 1.20m to 2.00m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:50 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN06

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631429.8

Scale 1 : 25

End Date 11 February 2016

Northing 145022.7 Ground level 109.35mOD

Depth 1.95 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		1.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Frequent rootlets.	0.30	109.05	
				Structureless CHALK composed of white and grey gravelly SILT. Gravel is subrounded and rounded fine to coarse weak medium density white with rare black specks and angular coarse flint. (CIRIA Grade Dm)			
					Trial pit completed at 1.95m.	1.95	107.40

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.7 x 1.95 x 2.75m.
 Trial pit used for soakaway test from 0.98m to 1.95m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:51 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN07

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 10 February 2016

Easting 631291.7

Scale 1 : 25

End Date 10 February 2016

Northing 145308.8 Ground level 102.20mOD

Depth 2.95 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Rare rootlets.	0.20	102.00	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular fine to coarse flint.			
				Structureless CHALK composed of white and light grey gravelly SILT. Gravel is subrounded and rounded fine to coarse very weak low density white with frequent black specks chalk and angular coarse flint. (CIRIA Grade Dm)	2.10	100.10	
				Trial pit completed at 2.95m.	2.95	99.25	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x2.95x2.80m.
 Trial pit used for soakaway test from 2.10m to 2.95m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:51 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN101

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631142.0

Scale 1 : 25

End Date 11 February 2016

Northing 145243.5 Ground level 108.80mOD

Depth 2.50 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.00	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium flint and rare chalk. Rare rootlets. Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular medium and coarse flint and chalk.	0.15	108.65	
				2.40 - 2.50m: Gravel is subrounded and subangular fine and medium chalk and medium and coarse flint. Trial pit completed at 2.50m.	2.50	106.30	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 0.70.x2.50x2.75m.
Trial pit used for soakaway test from 1.23m to 2.50m
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:51 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN102

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631216.5

Scale 1 : 25

End Date 11 February 2016

Northing 145213.0 Ground level 103.35mOD

Depth 3.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Frequent rootlets.	0.20	103.15	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular medium and coarse flint.			
				Structureless CHALK composed of white and light grey gravelly SILT. Gravel is subrounded and rounded fine to coarse very weak low density white with rare black specks chalk and angular coarse flint. (CIRIA Grade Dm)	2.05	101.30	
				Trial pit completed at 3.00m.	3.00	100.35	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x3.00x2.80m.
 Trial pit used for soakaway test from 2.05m to 3.00m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:52 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN103

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631193.1

Scale 1 : 25

End Date 11 February 2016

Northing 145119.0 Ground level 102.30mOD

Depth 2.90 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B			Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Rare rootlets.	0.20	102.10	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular medium and coarse flint.			
						2.90	
				Trial pit completed at 2.90m.			

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x2.90x2.75m.
 Trial pit used for soakaway test from 1.85m to 2.90m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:52 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN104

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 11 February 2016

Easting 631277.6

Scale 1 : 25

End Date 11 February 2016

Northing 145161.0 Ground level 100.75mOD

Depth 3.30 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Rare rootlets.	0.25	100.50	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular fine and coarse flint.			
				Structureless CHALK composed of light grey gravelly SILT. Gravel is subrounded and rounded fine to coarse very weak low density white with rare black specks chalk and subangular and angular coarse flint. (CIRIA Grade Dm)	2.20	98.55	
				Trial pit completed at 3.30m.	3.30	97.45	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70x3.30x2.75m.
 Trial pit used for soakaway test from 2.20m to 3.30m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:52 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



CLIENT WSP GROUP

IN105

SITE WHITFIELD

Sheet 1 of 1

Start Date 12 February 2016

Easting 631356.7

Scale 1 : 25

End Date 12 February 2016

Northing 145252.2 Ground level 98.55mOD

Depth 3.00 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown silty CLAY.	0.10	98.45	
				Soft orangish brown slightly gravelly silty CLAY. Gravel is angular and subrounded fine to coarse flint and rare chalk.			
				Structureless CHALK composed of grey gravelly SILT. Gravel is subrounded and rounded fine to coarse very weak low density white with frequent black specks chalk, rarely angular coarse flint. (CIRIA Grade Dm)	2.00	96.55	
				Trial pit completed at 3.00m.	3.00	95.55	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x3.00x2.75m.
 Trial pit used for soakaway test from 2.00m to 3.00m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:53 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN106

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 12 February 2016

Easting 631371.5

Scale 1 : 25

End Date 12 February 2016

Northing 145295.4 Ground level 97.80mOD

Depth 2.50 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.00	Grass over soft brown silty CLAY.	0.10	97.70	
				Soft and firm orangish brown slightly gravelly silty CLAY. Gravel is angular and subrounded fine to coarse flint and chalk.			
				Trial pit completed at 2.50m.	2.50	95.30	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x2.50x2.70m.
 Trial pit used for soakaway test from 1.30m to 2.50m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:53 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



IN108

CLIENT WSP GROUP

SITE WHITFIELD

Sheet 1 of 1

Start Date 9 February 2016

Easting 631341.6

Scale 1 : 25

End Date 9 February 2016

Northing 145354.7 Ground level 100.15mOD

Depth 2.90 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Frequent rootlets.	0.20	99.95	
				Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular fine to coarse flint.			
				Structureless CHALK composed of light grey gravelly SILT. Gravel is subrounded and rounded fine to coarse weak low density white with rare black specks chalk and angular coarse flint. (CIRIA Grade Dm)	1.90	98.25	
				Trial pit completed at 2.90m.	2.90	97.25	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.70.x2.90x2.50m.
 Trial pit used for soakaway test from 1.90m to 2.90m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:53 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634

CHECKED

CT

TRIAL PIT LOG



CLIENT WSP GROUP

IN109

SITE WHITFIELD

Sheet 1 of 1

Start Date 12 February 2016

Easting 631369.0

Scale 1 : 25

End Date 12 February 2016

Northing 145455.9 Ground level 101.05mOD

Depth 2.90 m

water record	sample/test			description	depth (m)	level (m)	legend
	no/type	result	depth (m)				
Dry	1B		2.50	Grass over soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium chalk. Frequent rootlets. Soft light brown slightly gravelly sandy CLAY. Gravel is subangular and angular fine to coarse flint.	0.10	100.95	
				Structureless CHALK composed of light grey gravelly SILT. Gravel is subrounded and rounded fine to coarse weak low density white with rare black specks chalk and angular coarse flint. (CIRIA Grade Dm)	1.40	99.65	
				Trial pit completed at 2.90m.	2.90	98.15	

Notes

Trial pit excavated by 8 tonne tracked mechanical excavator.
 Groundwater not encountered.
 Trial pit sides remained stable and vertical.
 Trial pit dimensions 0.60.x2.90x2.60m.
 Trial pit used for soakaway test from 2.10m to 2.90m
 On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

Geotechnical Engineering Ltd. Tel. 01452 527743 31634 MASTER.GPJ TRIAL\JH.GPJ GEOTECH2.GLB 09/03/2016 16:52:54 OG CT

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS



CONTRACT

31634



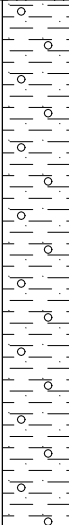
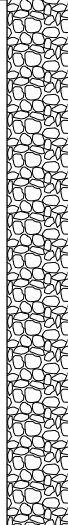
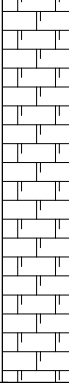
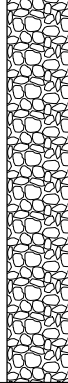
CHECKED

CT

TRIAL PIT LOG

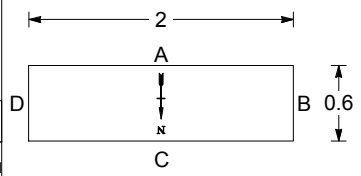
Project: Whitfield
 Job No: 70012378



Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.40)	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
1.00	ES					101.20	0.40	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
2.00	B ES					99.70	1.90	Recovered as structureless CHALK composed of white slightly clayey fine to coarse angular to subrounded GRAVEL with occasional flint cobbles. Gravel is weak white with rare black specks. (Seaford Chalk Formation, Grade Dc)		SECK	
3.00	B BLK					98.60	3.00				
3.00-3.10											

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_16_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/3/16

General Remarks
 Hole terminated at 3.0m due to reach of excavator.






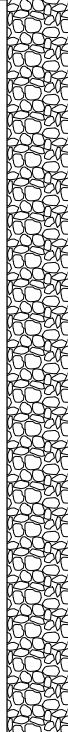
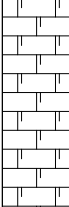
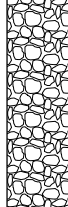
Shoring/Support:
Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	101.600	Co-Ordinates (NGR)	E 631245 N 145126	Date	11-02-16 11-02-16	Trial Hole No. TP101
Orientation	0 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TRIAL PIT LOG

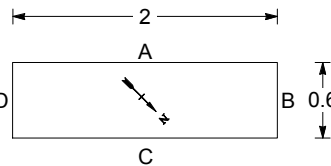
Project: Whitfield
 Job No: 70012378



Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.40						102.89	0.40	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
1.00	B						(2.10)	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
2.00	ES										
2.50						100.79	2.50	Recovered as structureless CHALK composed of white slightly clayey slightly sandy fine to coarse angular to subrounded GRAVEL with rare coarse flints. Gravel is weak white with rare black specks. (Seaford Chalk Formation, Grade Dc)		SECK	
3.00	B					100.19	3.10				

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/3/16

General Remarks
 Hole terminated at 3.1m due to reach of excavator.



Shoring/Support:
 Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	103.288	Co-Ordinates (NGR)	E 631200 N 145173	Date	11-02-16	Trial Hole No.
Orientation	45 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TP102

TRIAL PIT LOG

Project: Whitfield
 Job No: 70012378



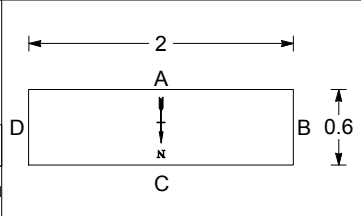
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.00 - 0.30						100.52	0.30	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
0.30 - 2.00	B ES						(2.60)	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
2.00 - 2.50	ES							2.00 Becoming firm to stiff CLAY.			
2.50 - 2.90	B					97.92	2.90	Possible surface of the chalk revealed, not sufficient recovery to prove.			

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_ECJ_WSPTEMPLATE1.03.GDT 15/03/16

General Remarks
 Hole terminated at 2.9 due to reach of excavator.

Shoring/Support:
 Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	100.823	Co-Ordinates (NGR)	E 631254 N 145187	Date	11-02-16	Trial Hole No.
Orientation	0 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TP103

TRIAL PIT LOG

Project: Whitfield
Job No: 70012378



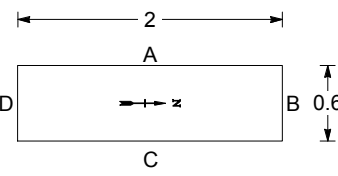
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.30						98.67	0.30	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
1.00	B						(1.40)	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
1.00	ES					97.27	1.70	Recovered as structureless CHALK composed of white slightly sandy fine to coarse angular to subrounded GRAVEL. Gravel is weak white with occasional linear orange staining. (Seaford Chalk Formation, Grade Dc)		SECK	
3.00	B					95.97	3.00				
3.00	ES										

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_16_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/3/16

General Remarks
Hole terminated at 3.0m due to reach of excavator.

Shoring/Support:
Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	98.967	Co-Ordinates (NGR)	E 631339 N 145228	Date	09-02-16 09-02-16	Trial Hole No. TP104
Orientation	90 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TRIAL PIT LOG

Project Whitfield Job No 70012378



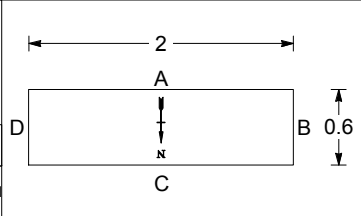
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.00 - 0.40						99.65	0.40	Grass over brown sandy slightly gravelly CLAY. Gravel is fine and medium angular to subangular flint. (TOPSOIL)		TS	
0.40 - 2.60	B ES						(2.60)	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
2.60 - 3.00	B					97.05	3.00				

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_ECJ_WSPTEMPLATE1.03.GDT 15/03/16

General Remarks
Hole terminated at 3.0m due to reach of excavator.

Shoring/Support:
Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 2.00m	Logged By Rae Dunn	Client Halsbury Homes		Sheet 1 of 1
Width 0.60m	Ground Level (m AOD) 100.047	Co-Ordinates (NGR) E 631293 N 145254	Date 09-02-16 09-02-16	Trial Hole No. TP105
Orientation 0 degrees from north	Method/Plant Used 360 Excavator	Contractor Geotechnical Engineering	Scale 1:21.3	

TRIAL PIT LOG

Project: Whitfield
 Job No: 70012378

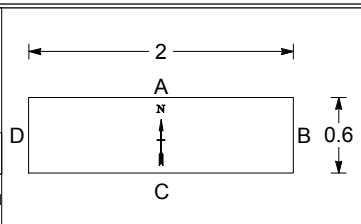


Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
97.58						97.58	0.10	Grass over brown sandy CLAY. (TOPSOIL)		TS	
1.50	B					(2.90)		Soft orangish brown sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is medium and coarse angular to subangular flint. (HEAD).		HD	
1.50	ES										
2.50	B										
2.50	ES										
						94.68	3.00				

General Remarks
 Hole terminated at 3m due to reach of excavator.

Shoring/Support:
 Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	97.675	Co-Ordinates (NGR)	E 631380 N 145299	Date	08-02-16	Trial Hole No.
Orientation	180 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TP106

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_16_WHITFIELD_GINT_ECJ_WSPTEMPLATE1.03.GDT 15/3/16

TRIAL PIT LOG

Project: Whitfield
 Job No: 70012378



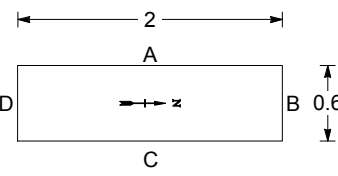
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.00 - 0.30						105.11	0.30	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
0.30 - 2.60	ES						(2.60)	Soft orangish brown slightly sandy slightly gravelly CLAY with occasional flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD	
2.60 - 2.90	B					102.51	2.90				
2.90 - 3.10	B ES					102.31	3.10	Recovered as structureless CHALK composed of white slightly clayey slightly sandy fine to coarse subangular to subrounded GRAVEL with occasional flint cobbles. Gravel is weak white with occasional black specks. (Seaford Chalk Formation, Grade Dc)		SECK	

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_EC.N.GPJ WSPTEMPLATE1.03.GDT 15/3/16

General Remarks
 Hole terminated at 3.1m due to reach of excavator.

Shoring/Support:
Stability:

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.






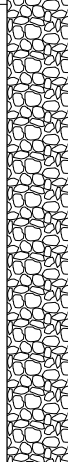

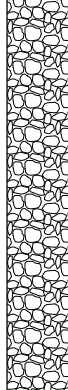
Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	105.410	Co-Ordinates (NGR)	E 631205 N 145258	Date	11-02-16	Trial Hole No.
Orientation	90 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TP107

TRIAL PIT LOG

Project
 Whitfield

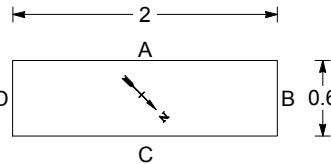
Job No
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m ²)	P Pen (kN/m ²)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
								Grass over brown sandy CLAY. (TOPSOIL)		TS	
1.00	B					100.53	0.30	Soft orangish brown slightly sandy CLAY with occasional flint cobbles. (HEAD)		HD	
1.00	ES					(2.45)					
2.00	B							Recovered as structureless CHALK composed of white slightly clayey fine to coarse angular to subrounded GRAVEL with occasional flint cobbles. Gravel is weak and white. (Seaford Chalk Formation, Grade Dc)		SECK	
2.00	ES					98.08	2.75				
2.70	ES					97.93	2.90				
2.80	ES										



08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/03/16

General Remarks
 Hole terminated at 2.9m due to reach of excavator.



Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	100.830	Co-Ordinates (NGR)	E 631301 N 145290	Date	09-02-16	Trial Hole No.
Orientation	45 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

Shoring/Support:
Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

Trial Hole No.
TP108

TRIAL PIT LOG

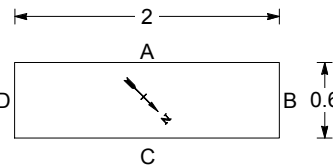
Project: Whitfield
 Job No: 70012378



Depth	Type	PID (ppmv)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.00 - 0.30						100.99	0.30	Grass over brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular to subrounded of flint and chalk. (TOPSOIL)		TS	
0.30 - 1.00	B ES					99.49	1.50	Soft orangish brown slightly sandy CLAY with occasional flint cobbles. (HEAD)		HD	
1.00 - 1.80	ES					99.49	1.80	Structureless CHALK composed of white slightly clayey slightly sandy GRAVEL with occasional flint cobbles. Gravel is weak white with occasional black specks. (Seaford Chalk Formation, Grade Dc)		SECK	
1.80 - 3.00	B					98.29	3.00				

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_16_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/3/16

General Remarks
 Hole terminated at 3.0m due to reach of excavator.



Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	101.291	Co-Ordinates (NGR)	E 631311 N 145333	Date	09-02-16	Trial Hole No.
Orientation	45 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

Shoring/Support:
Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.





Trial Hole No.
TP109

TRIAL PIT LOG

Project
 Whitfield

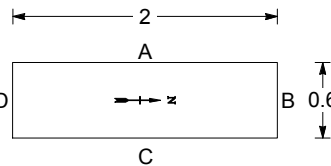
Job No
 70012378



Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
97.86							0.10	Grass over soft brown sandy slightly gravelly CLAY. Gravel is fine to medium angular to subangular flint. Frequent rootlets. (TOPSOIL)		TS	
1.00	B							Soft to firm orangish brown very sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint. (HEAD)		HD	
1.00	ES						(3.00)				
2.00	ES										
3.00	B										
						94.86	3.10				

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_16_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/03/16

General Remarks
 Hole terminated at 3.1m bgl due to reach of excavator.



Length	2.00m
Width	0.60m
Orientation	90 degrees from north

Logged By	Rae Dunn
Ground Level (m AOD)	97.963
Method/Plant Used	360 Excavator

Client	Halsbury Homes	
Co-Ordinates (NGR)	E 631373	N 145358
Date	09-02-16	09-02-16
Contractor	Geotechnical Engineering	
Scale	1:21.3	

Sheet
 1 of 1






Trial Hole No.
TP110

Shoring/Support:
Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

TRIAL PIT LOG

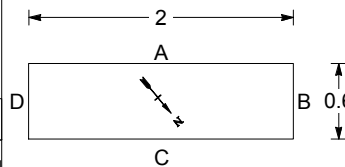
Project: Whitfield
 Job No: 70012378



Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.00 - 0.60	B ES					103.79	0.60	Grass over brown very clayey slightly gravelly SAND with rare flint cobbles. Gravel is fine to coarse angular to subangular flint. (TOPSOIL)		TS	
0.60 - 1.10						(1.10)	Soft orangish brown slightly sandy slightly gravelly CLAY with rare flint cobbles. Gravel is fine to coarse angular to subangular flint. (HEAD)		HD		
1.10 - 1.70	ES					102.69	1.70	1.50 Becoming stiff CLAY			SECK
1.70 - 2.00							(1.40)	Recovered as structureless CHALK composed of white slightly sandy fine to coarse angular to subrounded GRAVEL with occasional coarse flints. Gravel is weak white with rare black specks. (Seaford Chalk Formation, Grade Dc)		SECK	
2.00 - 3.10	B					101.29	3.10				

08 WSP TP LOG LS 2 PHOTO 70012378_16_02_15_WHITFIELD_GINT_ECJ_GPJ_WSPTEMPLATE1.03.GDT 15/03/16

General Remarks
 Hole terminated at 3.1 due to reach of excavator.



Shoring/Support:
Stability:
 Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.




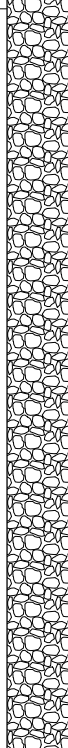


Length	2.00m	Logged By	Rae Dunn	Client	Halsbury Homes		Sheet	1 of 1
Width	0.60m	Ground Level (m AOD)	104.387	Co-Ordinates (NGR)	E 631271 N 145342	Date	09-02-16	Trial Hole No.
Orientation	40 degrees from north	Method/Plant Used	360 Excavator	Contractor	Geotechnical Engineering	Scale	1:21.3	

TRIAL PIT LOG

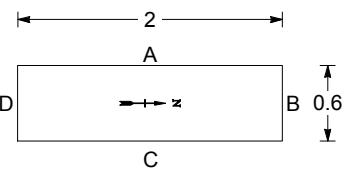
Project
 Whitfield

Job No
 70012378



Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
98.95							(0.20)	Grass over brown sandy CLAY. (TOPSOIL)		TS	
96.85	ES						(2.10)	Soft orangish brown slightly sandy CLAY with occasional flint cobbles. (HEAD)		HD	
96.65	B ES						(0.20)	Recovered as structureless CHALK composed of white slightly clayey GRAVEL. Gravel is weak white with rare black specks. (Seaford Chalk Formation, Grade Dc)		SECK	
96.65	B ES						2.50				

General Remarks
 Hole terminated at 2.5 due to reach of excavator.



Length
 2.00m

Logged By
 Rae Dunn

Client
 Halsbury Homes

Sheet
 1 of 1

Shoring/Support:
Stability:

Width
 0.60m

Ground Level (m AOD)
 99.154

Co-Ordinates (NGR)
 E 631369 N 145384

Date
 08-02-16
 08-02-16

Trial Hole No.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

Orientation
 90 degrees from north

Method/Plant Used
 360 Excavator

Contractor
 Geotechnical Engineering

Scale
 1:21.3

TP112

Appendix E

LABORATORY RESULTS - GEOTECHNICAL



WSP Environmental
Unit 9, The Chase
John Tate Road
Foxholes Business Park
Hertford
SG13 7NN

Attention: Ella Niehorster

CERTIFICATE OF ANALYSIS

Date: 09 March 2016
Customer: H_WSP_HER
Sample Delivery Group (SDG): 160219-37
Your Reference: 70012378
Location: Whitfield
Report No: 352717

This report has been revised and directly supersedes 352446 in its entirety.

We received 27 samples on Friday February 19, 2016 and 27 of these samples were scheduled for analysis which was completed on Tuesday March 08, 2016. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager

SDG: 160219-37
Job: H_WSP_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378-S01
Report Number: 352717
Superseded Report: 352446

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12956180	BH1	BLK	0.20 - 0.50	08/02/2016
12956178	BH1	BLK	0.50 - 0.80	08/02/2016
12956168	BH1	U100	1.20 - 1.65	08/02/2016
12956170	BH1	U100	10.20 - 10.65	09/02/2016
12956119	BH1	U100	4.20 - 4.65	08/02/2016
12956145	BH1	U100	7.20 - 7.65	08/02/2016
12956154	BH02	BLK	0.20 - 0.50	10/02/2016
12956176	BH3	U100	1.20 - 1.65	11/02/2016
12956172	BH3	U100	4.20 - 4.52	11/02/2016
12956122	IN01	BLK	1.50 - 1.60	10/02/2016
12956156	IN03	BLK	2.00 - 2.10	12/02/2016
12956159	IN04	BLK	2.00 - 2.10	12/02/2016
12956124	IN05	BLK	1.50 - 1.60	10/02/2016
12956138	IN06	BLK	1.50 - 1.60	11/02/2016
12956128	IN07	BLK	2.50 - 2.50	10/02/2016
12956131	IN102	BLK	2.50 - 2.60	11/02/2016
12956133	IN103	BLK	2.00 - 2.10	11/02/2016
12956161	IN104	BLK	2.50 - 2.50	11/02/2016
12956135	IN105	BLK	2.50 - 2.50	12/02/2016
12956126	IN106	BLK	2.00 - 2.10	12/02/2016
12956163	IN108	BLK	2.50 - 2.50	09/02/2016
12956165	IN109	BLK	2.50 - 2.50	12/02/2016
12956140	TP101	BLK	3.00 - 3.10	09/02/2016
12956182	WS3	BLK	1.00 - 1.10	10/02/2016
12956150	WS106	BLK	1.00 - 1.10	11/02/2016
12956148	WS107	BLK	0.40 - 0.50	11/02/2016
12956143	WS107	BLK	1.00 - 1.10	11/02/2016

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 160219-37
Job: H_WSP_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378-S01
Report Number: 352717
Superseded Report: 352446

Table with columns: Results Legend, Customer Sample Ref., WS106, WS107, WS107, Component, LOD/Units, Method. Includes rows for Moisture Content, Plasticity Index, PSD, BRE SD1, and WS Sulphate.



CERTIFICATE OF ANALYSIS

Validated

SDG: 160219-37
Job: H_WSP_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378-S01
Report Number: 352717
Superseded Report: 352446

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 160219-37
Job: H_WSP_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378-S01
Report Number: 352717
Superseded Report: 352446

Test Completion Dates

Lab Sample No(s)	12956119	12956145	12956168	12956170	12956178	12956180	12956154	12956172	12956176	12956122
Customer Sample Ref.	BH1	BH1	BH1	BH1	BH1	BH1	BH02	BH3	BH3	IN01
AGS Ref.	U100	U100	U100	U100	BLK	BLK	BLK	U100	U100	BLK
Depth	4.20 - 4.65	7.20 - 7.65	1.20 - 1.65	10.20 - 10.65	0.50 - 0.80	0.20 - 0.50	0.20 - 0.50	4.20 - 4.52	1.20 - 1.65	1.50 - 1.60
Type	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH
Geotechnical Testing*	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016

Lab Sample No(s)	12956156	12956159	12956124	12956138	12956128	12956131	12956133	12956161	12956135	12956126
Customer Sample Ref.	IN03	IN04	IN05	IN06	IN07	IN102	IN103	IN104	IN105	IN106
AGS Ref.	BLK	BLK	BLK	BLK	BLK	BLK	BLK	BLK	BLK	BLK
Depth	2.00 - 2.10	2.00 - 2.10	1.50 - 1.60	1.50 - 1.60	2.50 - 2.50	2.50 - 2.60	2.00 - 2.10	2.50 - 2.50	2.50 - 2.50	2.00 - 2.10
Type	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH
Geotechnical Testing*	08-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	08-Mar-2016	08-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016

Lab Sample No(s)	12956163	12956165	12956140	12956182	12956150	12956143	12956148
Customer Sample Ref.	IN108	IN109	TP101	WS3	WS106	WS107	WS107
AGS Ref.	BLK	BLK	BLK	BLK	BLK	BLK	BLK
Depth	2.50 - 2.50	2.50 - 2.50	3.00 - 3.10	1.00 - 1.10	1.00 - 1.10	1.00 - 1.10	0.40 - 0.50
Type	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH	GEOTECH
Geotechnical Testing*	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016	07-Mar-2016



Contract Number: 30090

Client's Reference: **SDG 160219-37**

Report Date: **04-03-2016**

Client **ALcontrol Laboratories**
Hawarden Business Park
Manor Road
Flintshire
CH5 3US

Contract Title: **Whitfield**
For the attention of: **Alcontrol GSTL**

Date Received: **26-02-2016**
Date Commenced: **26-02-2016**
Date Completed: **04-03-2016**

Test Description	Qty
Moisture Content 1377 : 1990 Part 2 : 3.2 - * UKAS	11
Plasticity 1 Point Limit (ALC) - * UKAS	9
PSD-Wet Sieve/Dry Sieve 1377 : 1990 Part 2 : 9.2 - * UKAS	4
Saturated Moisture Content (SMC)	17
CD SS 100mm single stage test on a 102 mm diameter Part 8 Continued specimen at one confining pressure, test duration four days. - @ Non Accredited Test	1
One Dimensional consolidation - * UKAS 6 STAGE CONSOL	1
BRE Suite REDUCED SUITE SD1	4

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
* - denotes test included in laboratory scope of accreditation
- denotes test carried out by approved contractor
@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Approved Signatories:

Alex Wynn (Associate Director) - Benjamin Sharp (Contracts Manager) - Emma Sharp (Office Manager)
Paul Evans (Quality/Technical Manager) - Vaughan Edwards (Managing Director)



2788

Laboratory Report



GEO Site & Testing Services Ltd

Contract Number: 30090

Test Description	Qty
WS Sulphate - @ Non Accredited Test	7
Extra over items for test duration in excess of four days.	2
Disposal of Samples on Project	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Approved Signatories:

Alex Wynn (Associate Director) - Benjamin Sharp (Contracts Manager) - Emma Sharp (Office Manager)

Paul Evans (Quality/Technical Manager) - Vaughan Edwards (Managing Director)

GEO Site & Testing Services Ltd

Unit 4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

Client ref: SDG 160219-37
 Location: Whitfield
 Contract Number: 30090

Hole Number	Sample Number	Type	Depth (m)	Description of Sample*
BH02		B	0.20 - 0.50	Off white slightly clayey fine sandy CHALK.
BH1		B	0.20 - 0.50	Brown fine sandy silty clayey fine to coarse GRAVEL.
IN03		B	2.00 - 2.10	Off white slightly fine to coarse sandy clayey silty fine to coarse GRAVEL (chalk).
IN103		B	2.00 - 2.10	Brown slightly fine to coarse sandy fine to coarse gravelly SILT/CLAY with cobbles.
IN105		B	1.00 - 1.10	Off white fine sandy silty chalky CLAY.
IN106		B	2.00 - 2.10	Brown fine sandy silty CLAY.
IN109		B	1.10	Off white slightly clayey fine sandy CHALK.
WS107		B	0.40 - 0.50	Brown fine sandy silty CLAY.
WS107		B	1.00 - 1.10	Brown fine sandy silty CLAY.
WS3		B	1.00 - 1.10	Off white fine sandy silty chalky CLAY.
BH1		U	1.20 - 1.65	Off white slightly clayey fine sandy CHALK.
BH3		U	1.20 - 1.65	Orange brown sl fine sub-rounded gravelly fine sandy silty firm CLAY

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory



For and behalf of GEO Site & Testing Services Ltd

Authorised By:
 Ben Sharp (Contracts Manager)



Date: **9.3.16**



Test Report: Method of the Determination of the plastic limit and plasticity index
BS 1377 : Part 2 : 1990 Method 5

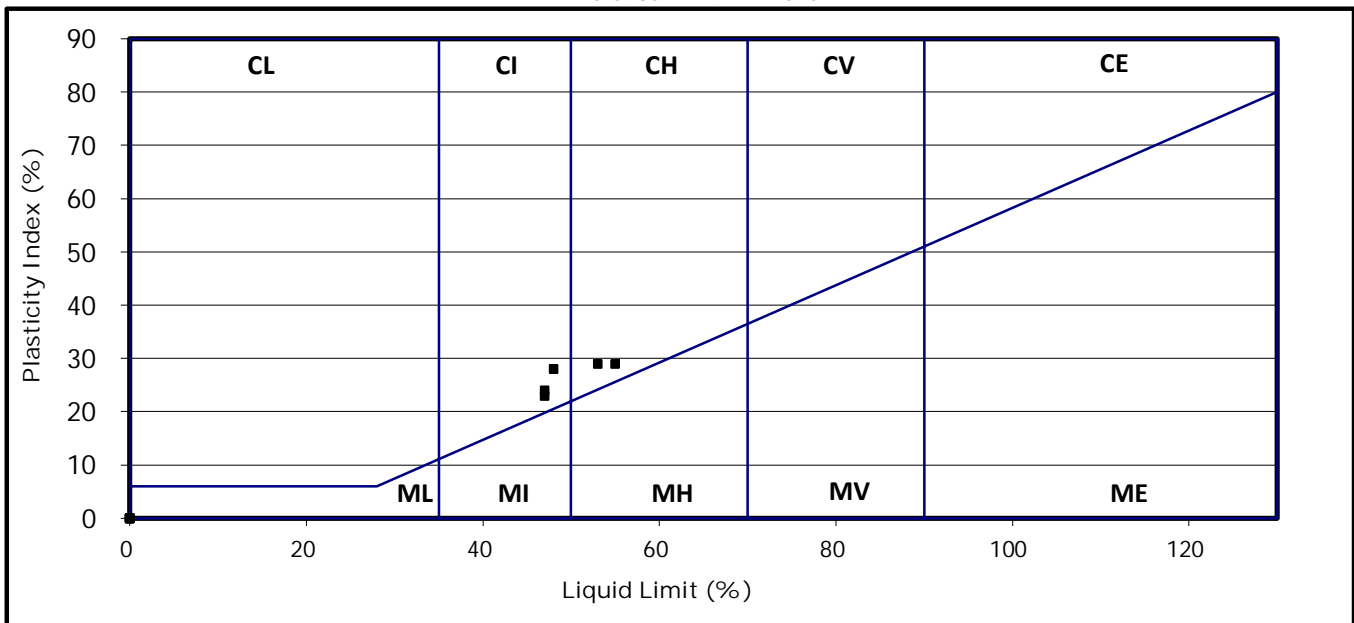
Client ref: SDG 160219-37
Location: Whitfield
Contract Number: 30090

Hole/ Sample Number	Sample Type	Depth m	Moisture Content % Cl. 3.2	Liquid Limit % Cl. 4.3/4.4	Plastic Limit % Cl. 5.	Plasticity Index % Cl. 6.	% Passing .425mm	Remarks
BH02	B	0.20 - 0.50	25		NP		23	
BH1	B	0.20 - 0.50	15		NP		24	
IN03	B	2.00 - 2.10	21		NP		53	
IN103	B	2.00 - 2.10	18					
IN105	B	1.00 - 1.10	26	53	24	29	67	CH High Plasticity
IN106	B	2.00 - 2.10	26	47	24	23	100	CI Intermediate Plasticity
IN109	B	1.10	32					
WS107	B	0.40 - 0.50	25	47	23	24	100	CI Intermediate Plasticity
WS107	B	1.00 - 1.10	25	48	20	28	100	CI Intermediate Plasticity
WS3	B	1.00 - 1.10	29	55	26	29	73	CH High Plasticity
BH1	U	1.20 - 1.65	27		NP		24	
BH3	U	1.20 - 1.65	22					

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

BS 5930:1999+A2:2010



For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)
Date: 9.3.16



Test Report:

**Particle Size Distribution Test
BS 1377 Part 2:1990.**

Wet Sieve, Clause 9.2

Client ref: SDG 160219-37
Contract Number: 30090
Hole Number: IN03

Sample Number:
Depth from (m): 2.00
Depth to (m): 2.10
Sample Type: B

Location: Whitfield
Description: Off white slightly fine to coarse sandy clayey silty fine to coarse GRAVEL (chalk).

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	92
28	62
20	41
14	29
10	24
6.3	20
5.0	18
3.35	18
2.00	16
1.18	16
0.60	15
0.425	15
0.300	14
0.212	14
0.150	14
0.063	13



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	13	3	84	0	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 4.3.16



Test Report:

**Particle Size Distribution Test
BS 1377 Part 2:1990.**

Wet Sieve, Clause 9.2

Client ref: SDG 160219-37
Contract Number: 30090
Hole Number: IN103

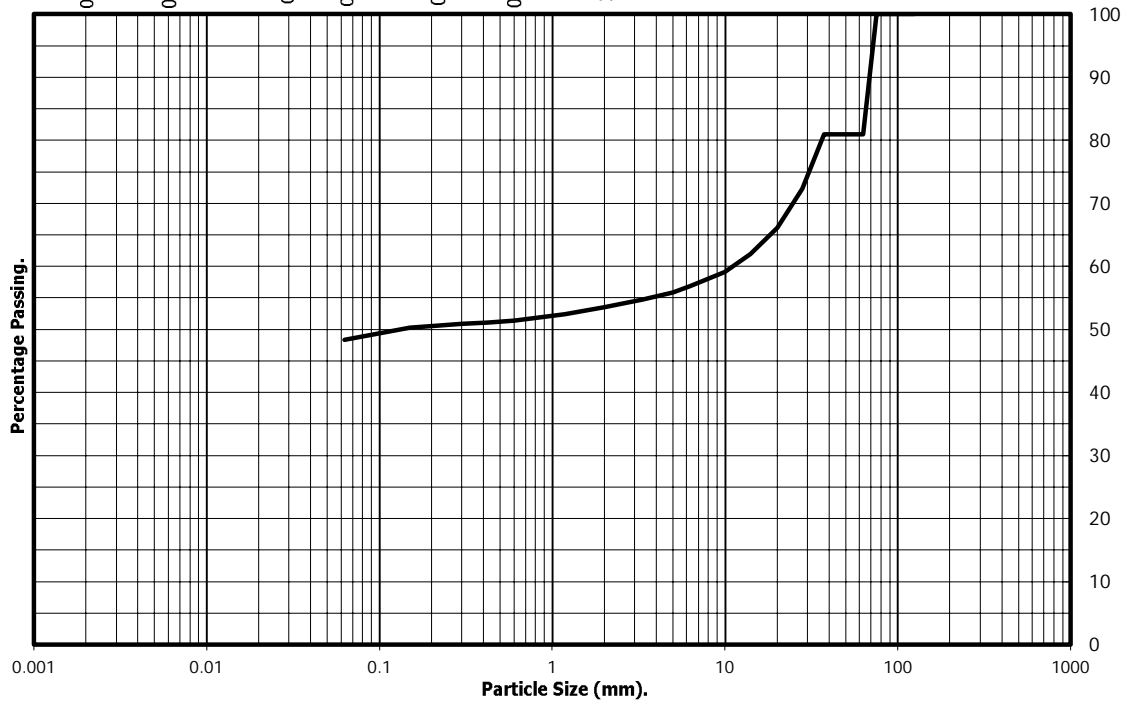
Sample Number:
Depth from (m): 2.00
Depth to (m): 2.10
Sample Type: B

Location: Whitfield

Description: Brown slightly fine to coarse sandy fine to coarse gravelly SILT/CLAY with cobbles.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	100
75	100
63	81
50	81
37.5	81
28	72
20	66
14	62
10	59
6.3	57
5.0	56
3.35	55
2.00	54
1.18	52
0.60	51
0.425	51
0.300	51
0.212	51
0.150	50
0.063	48



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	48	6	27	19	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 4.3.16



Test Report:

**Particle Size Distribution Test
BS 1377 Part 2:1990.**

Wet Sieve, Clause 9.2

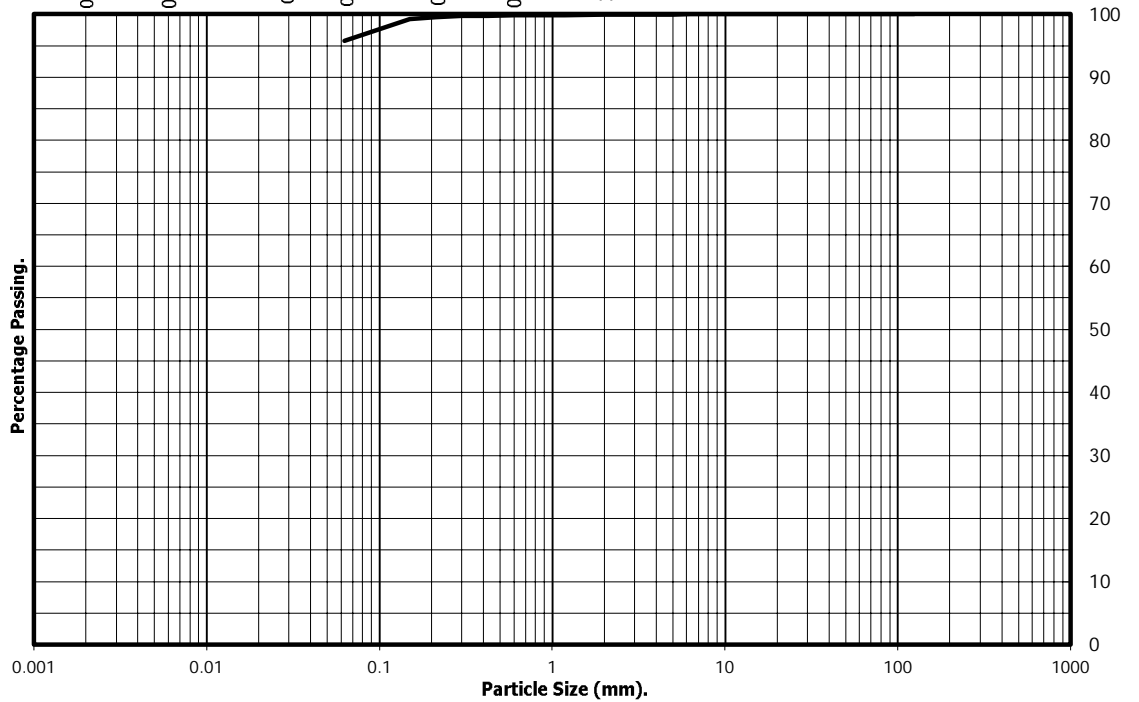
Client ref: SDG 160219-37
Contract Number: 30090
Hole Number: IN106

Sample Number:
Depth from (m): 2.00
Depth to (m): 2.10
Sample Type: B

Location: Whitfield
Description: Brown slightly fine to medium sandy SILT/CLAY.

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	100
6.3	100
5.0	100
3.35	100
2.00	100
1.18	100
0.60	100
0.425	100
0.300	100
0.212	100
0.150	99
0.063	96



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	96	4	0	0	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 4.3.16



Test Report:

**Particle Size Distribution Test
BS 1377 Part 2:1990.**

Wet Sieve, Clause 9.2

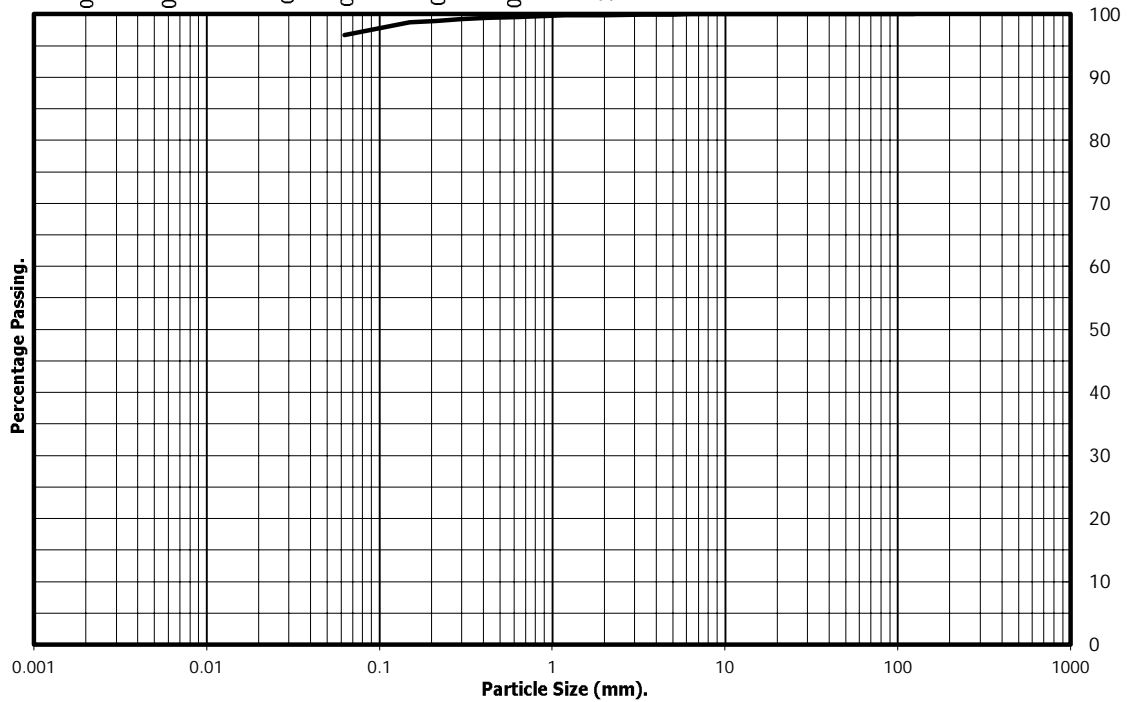
Client ref: SDG 160219-37
Contract Number: 30090
Hole Number: WS106

Sample Number:
Depth from (m): 1.00
Depth to (m): 1.10
Sample Type: B

Location: Whitfield
Description: Brown slightly fine to coarse sandy SILT/CLAY.

	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	
CLAY	SILT			SAND			GRAVEL			COBBLES

BS Test Sieve	% Passing
125	100
90	100
75	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	100
6.3	100
5.0	100
3.35	100
2.00	100
1.18	100
0.60	100
0.425	99
0.300	99
0.212	99
0.150	99
0.063	97



Particle Diameter	% Passing
0.02	#
0.006	#
0.002	#

	Silt and Clay	Sand	Gravel	Cobbles	Soil Fraction
	97	3	0	0	Total Percentage

Remarks:

#- not determined

For and behalf of GEO Site & Testing Services Ltd

Authorised By:
Ben Sharp (Contracts Manager)

Date: 4.3.16





Unit 4
Heol Aur
Dafen Ind EstateDafen
Carmarthenshire
SA14 8QN
Tel: 01554 784040
01554 750752
Fax: 01554 770529
01554 784041
Web: www.geo.uk.com

Certificate of Analysis

Date: 03-03-16

Client: Alcontrol

Our Reference: 30090-

Client Reference: 160219-37

Contract Title: Whitfield

Description: (Total Samples) 11

Date Started: 29-02-16

Date Completed: 03-03-16

Test Procedures: (B.S. 1377 : PART 3 : 1990 AND BRE CP2/79)

Notes:

Solid samples will be disposed 1 month and liquids 2 weeks
after the date of issue of this test certificate

Approved By:

Authorised Signatories:

Emma Williams
Laboratory Office Manager

Dafydd Simon
Laboratory Team Leader

Paul Evans
Quality Manager

Test Report:

Method for Saturation Moisture Content of Chalk

BS 1377 : Part 2 : 1990 Section 3.3

Client Ref:

Location :

Contract Number:

Borehole Number	Sample Number	Depth (m)		Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Saturation Moisture Content % Clause 3.3.6.	Remarks
		From	to					
BH02	1	0.20	0.50	25	1.71	1.36	36	
IN01	2	1.50	1.60	28	1.68	1.30	40	
IN04	3	2.00	2.10	29	1.71	1.32	39	
IN05	4	1.50	1.60	27	1.68	1.32	39	
IN06	5	1.50	1.60	32	1.65	1.25	43	
IN07	6	2.50		29	1.95	1.51	29	
IN102	7	2.50	2.60	30	1.64	1.27	42	
IN104	8	2.50		32	1.70	1.29	41	
IN105	9	2.50		27	1.68	1.32	39	
IN108	10	2.50		29	1.71	1.33	38	
IN109	1	2.50		32	1.65	1.25	43	
TP101	12	3.00	3.10	28	1.70	1.33	38	
BH1	13	1.20	1.65	22	1.57	1.29	40	
BH1	14	10.20	10.65	26	1.64	1.30	40	
BH1	15	4.20	4.65	19	1.49	1.25	43	



Emma Sharp - Office Manager

Checked By

4/3/16 Date

Ben Sharp - Contracts Manager

Approved By

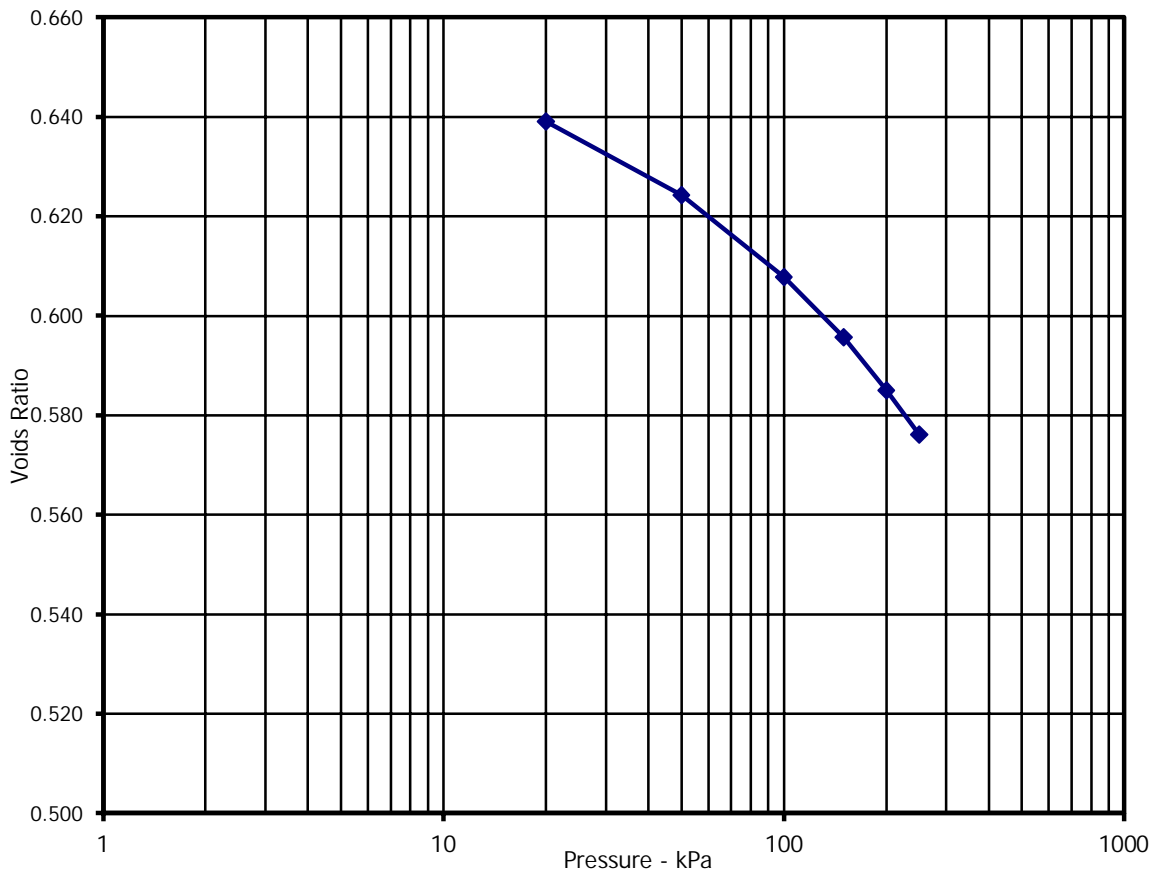
4/3/16

Test Report: ONE DIMENSIONAL CONSOLIDATION

BS 1377 : Part 5 : 3 : 1990

Client ref: **SDG 160219-37**
 Location: **Whitfield**
 Contract Number: **30090**
 Hole/Sample Number: **BH3**
 Depth (m) : **1.20 - 1.65**
 Sample Type: **U**

Initial Conditions		Pressure Range	Mv	Cv	Method of time fitting used
Moisture Content (%):	24	kPa	m2/MN	m2/yr	Cv Calculated using t90
Bulk Density (Mg/m3):	1.99	0 - 20	0.47	11.49	Nominal Laboratory Temperature 20'C
Dry Density (Mg/m3):	1.60	20 - 50	0.30	14.16	
Voids Ratio:	0.654	50 - 100	0.20	17.27	Location of specimen with sample top
Degree of saturation:	97.2	100 - 150	0.15	12.59	
Height (mm):	19.74	150 - 200	0.13	4.75	Remarks:
Diameter (mm)	74.95	200 - 250	0.11	1.60	
Particle Density (Mg/m3)	2.65				
Assumed					



[Signature]

Checked by

Date approved:

[Signature]

Approved by

04-03-16



Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.20
Date		03/03/2016
Disturbed / Undisturbed		Undisturbed

Description of Specimen

Orange brown sl fine sub-rounded gravelly fine sandy silty firm CLAY

Initial Specimen Conditions

Height	mm	208.00
Diameter	mm	102.00
Area	mm ²	8171.28
Volume	cm ³	1699.63
Mass	g	3475.20
Dry Mass	g	2846.20
Density	Mg/m ³	2.04
Dry Density	Mg/m ³	1.67
Moisture Content	%	22
Specific Gravity	kN/m ³	2.65
	(assumed/measured)	assumed

Final Specimen Conditions

Moisture Content	%	23
Density	Mg/m ³	2.08
Dry Density	Mg/m ³	1.69

DP Gans

Checked and Approved By

03/03/16

Date



Whitefield

Client Ref

160219-37

Contract No

30090

Consolidated Undrained Triaxial Compression Test BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Test Setup

Date started		26/02/2016
Date Finished		02/03/2016
Top Drain Used		y
Base Drain Used		y
Side Drains Used		y
Pressure System Number		P2
Cell Number		C2

Saturation

Cell Pressure Incr.	kPa	100.00
Back Pressure Incr.	kPa	95.00
Differential Pressure	kPa	5.00
Final Cell Pressure	kPa	300.00
Final Pore Pressure	kPa	297.00
Final B Value		1.03

Consolidation

Effective Pressure	kPa	22.00
Cell Pressure	kPa	300.00
Back Pressure	kPa	278.00
Excess Pore Pressure	kPa	19.00
Pore Pressure at End	kPa	278.00
Consolidated Volume	cm ³	1679.93
Consolidated Height	mm	207.20
Consolidated Area	mm ²	8108.14
Vol. Compressibility	m ² /MN	0.04169
Consolidation Coef.	m ² /yr.	107.30220

D P Gnan

Checked and Approved By

03/03/16

Date



Whitefield

Client Ref

160219-37

Contract No

30090

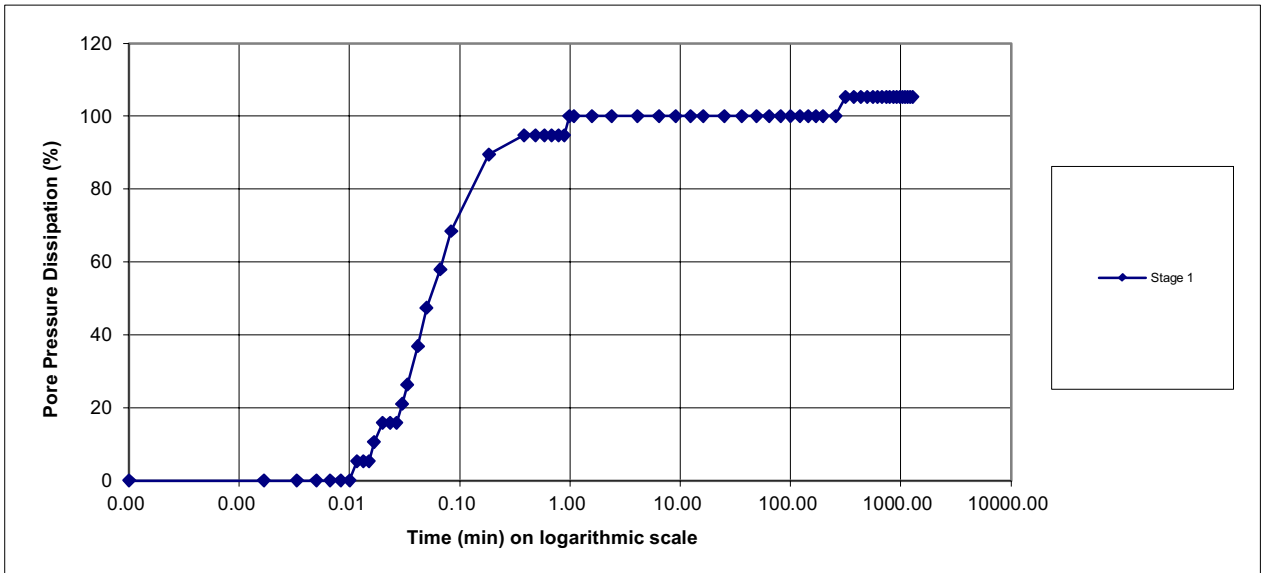
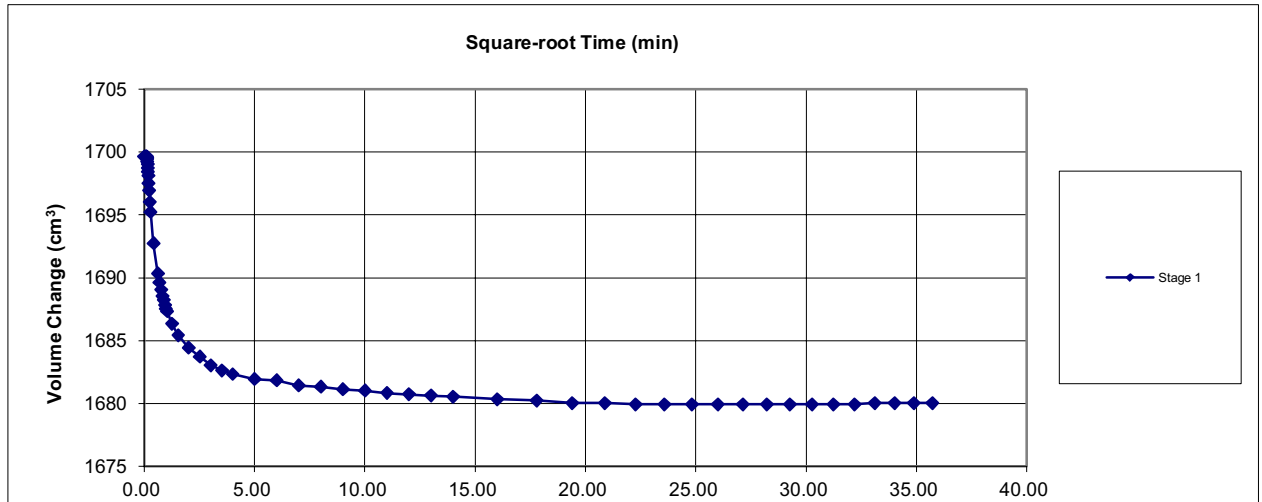
Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Consolidation Stage



DP Gnan

Checked and Approved By

03/03/16

Date



Whitefield

Client Ref

160219-37

Contract No

30090

Consolidated Undrained Triaxial Compression Test
BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Shearing

Initial Cell Pressure	kPa	300
Initial Pore Pressure	kPa	278
Rate of Strain	mm/min	2.2524

Max Deviator Stress

Axial Strain		5.671
Axial Stress	kPa	79.459
Cor. Deviator stress	kPa	76.357
Effective Major Stress	kPa	99.357
Effective Minor Stress	kPa	24.000
Effective Stress Ratio		4.140
s'	kPa	61.679
t'	kPa	37.679

Max Effective Principle Stress Ratio

Axial Strain		1.419
Axial Stress	kPa	59.089
Cor. Deviator stress	kPa	58.939
Effective Major Stress	kPa	74.939
Effective Minor Stress	kPa	16.000
Effective Stress Ratio		4.684
s'	kPa	45.469
t'	kPa	29.469

Shear Resistance Angle	degs	NA
Cohesion c'	kPa	NA
Unable to provide Angles for a single stage test.		

DP Glas

Checked and Approved By

03/03/16

Date



Whitefield

Client Ref

160219-37

Contract No

30090

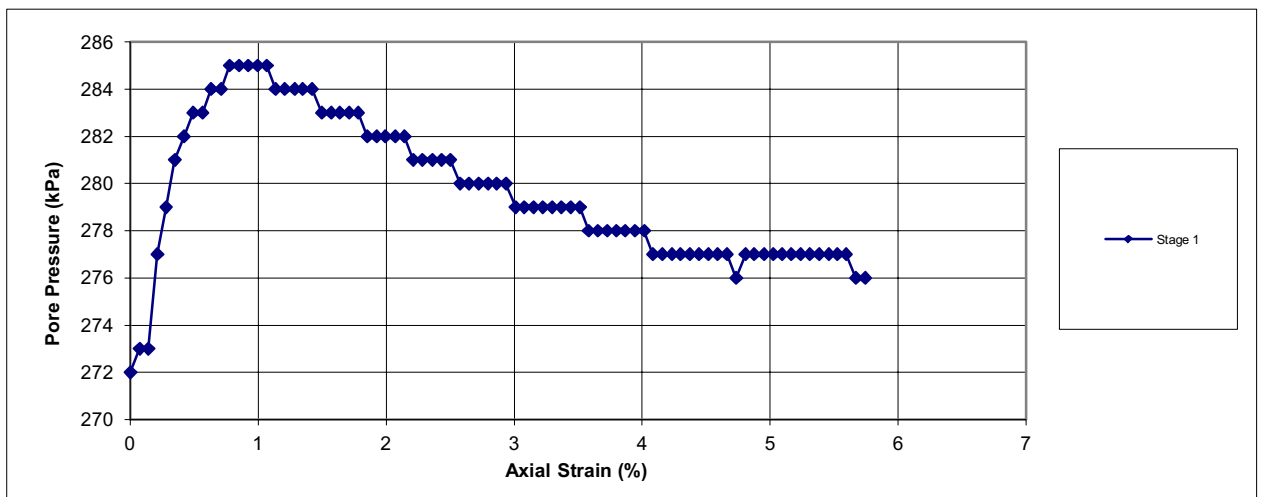
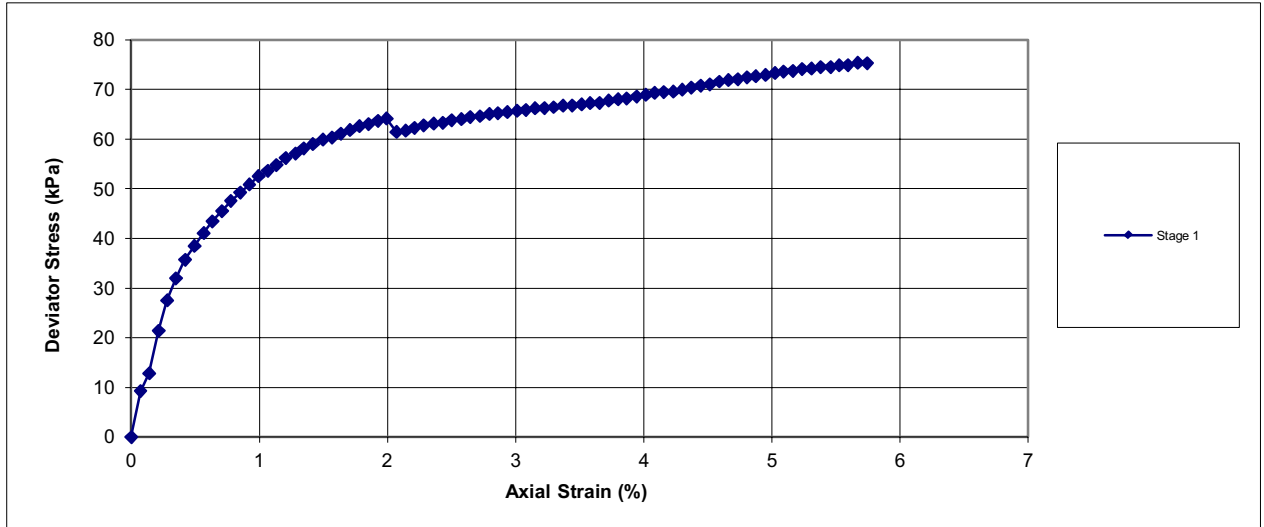
Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Shearing Stage



DP Gnan

Checked and Approved By

03/03/16

Date



Whitefield

Client Ref

160219-37

Contract No

30090

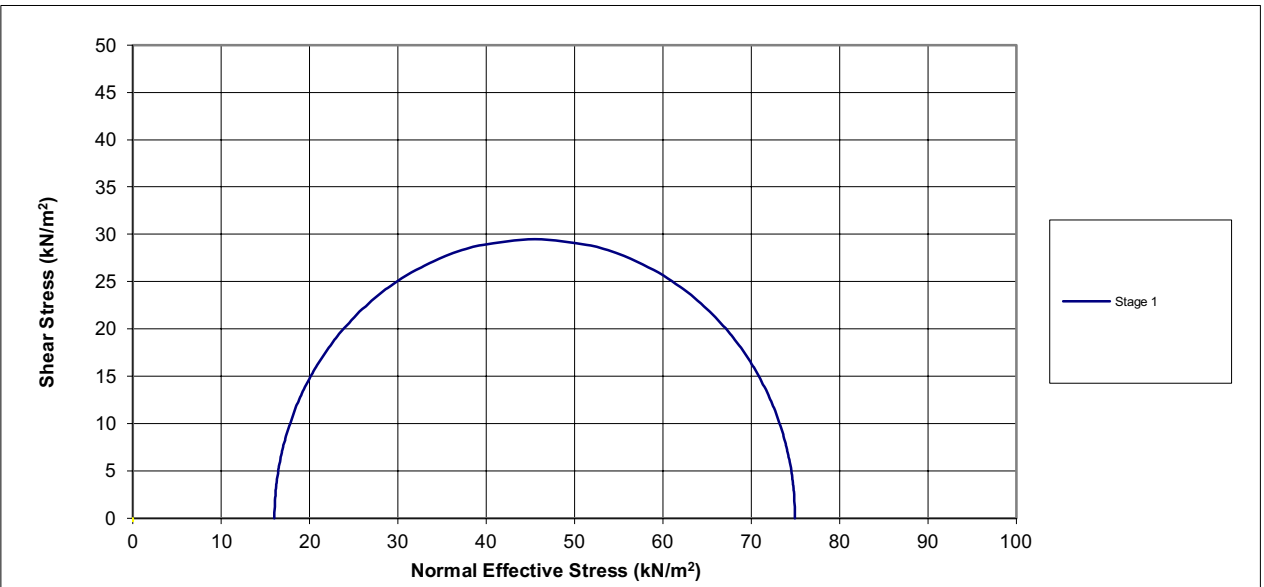
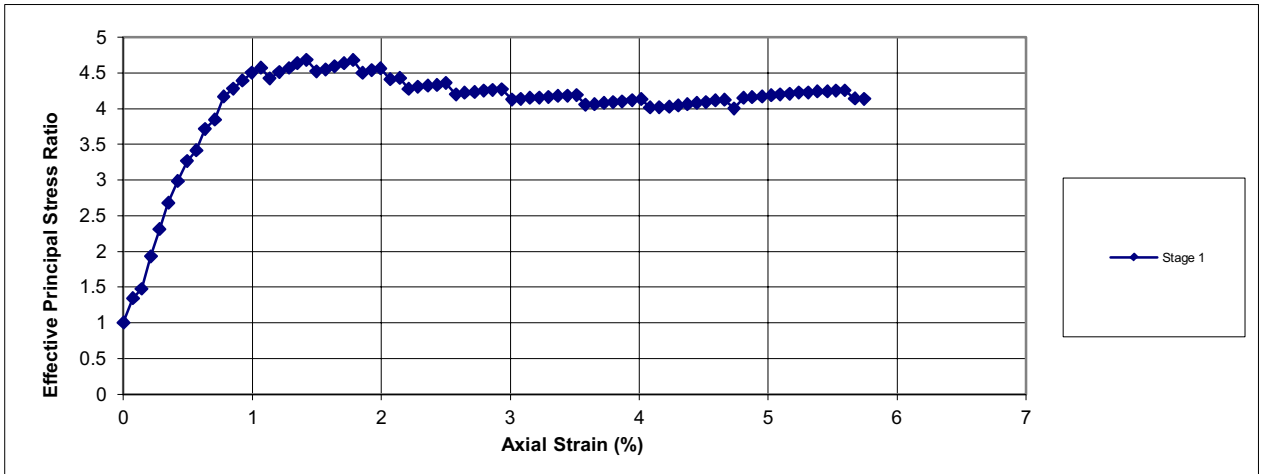
Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Shearing Stage



DP Gnan
Checked and Approved By

03/03/16
Date



Whitefield

Client Ref
160219-37
Contract No
30090

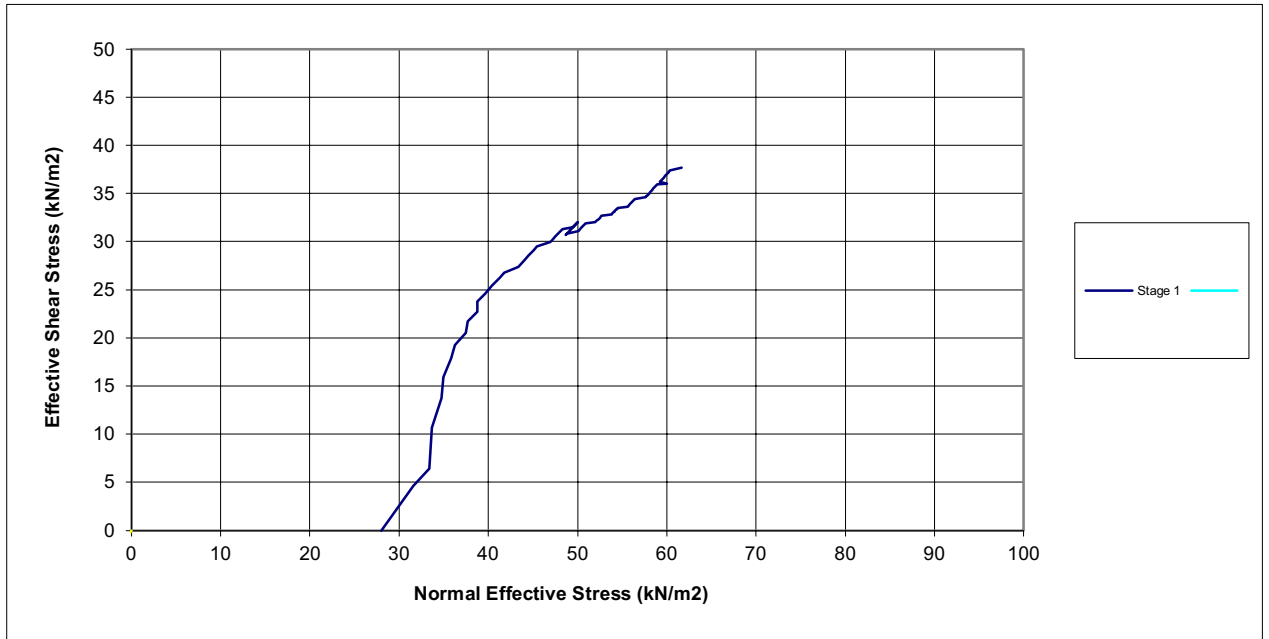
Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Specimen Details

Borehole		BH3
Sample No.		12956177
Depth	m	1.2
Date		03/03/2016

Shearing Stage



D P Grant

Checked and Approved By

03/03/16

Date

GSTL
GEO Site & Testing Services Limited

Whitefield

Client Ref

160219-37

Contract No

30090

Test Report:

Consolidated Undrained Triaxial Compression Test

BS 1377 : Part 8 : 1990

Client ref:	160219-37
Location:	Whitefield
Contract Number:	30090
Hole Number	BH3
Sample Number:	1E+07
Depth (m) :	1.20
Sample Type :	Specimen



POST TEST SPECIMEN



SPECIMEN SPLIT



B. S. P.

Checked / Checked By

Date Approved:

D. P. G. W.

Approved By:

2.3.16

Summary of Laboratory Sample Descriptions

Hole Number	Sample Number	Type	Depth (m)	Description of Sample*
BH1		U	1.20-1.65	Weak low to medium density off white CHALK. Fractures very closely spaced <20mm occasionally infilled with off white soft silt and sand sized comminuted chalk (CIRIA GRADE C5)
BH1		U	4.20-4.65	Low density off white STRUCTURELESS CHALK typically comprising sub angular fine to coarse gravel size fragments of chalk with off white soft silt and sand sized comminuted chalk (CIRIA GRADE Dc)
BH1		U	7.20-7.65	Weak low to medium density off white CHALK. Fractures very closely spaced <20mm occasionally infilled with off white soft silt and sand sized comminuted chalk (CIRIA GRADE C5)
BH1		U	10.20-10.65	Weak low to medium density off white CHALK. Fractures very closely spaced <20mm infilled with some off white soft silt and sand sized comminuted chalk (CIRIA GRADE C5)
BH3		U	4.2-4.65	Weak medium density off white CHALK. Fractures very closely spaced <20mm occasionally infilled with off white soft silt and sand sized comminuted chalk and soft brown clay and occasional yellow staining on fracture surfaces (CIRIA GRADE C5)

Note: Results on this table are in summary format and may not meet the requirements of the relevant standards, additional information is held by the laboratory

Checked by

2/3/16

Date

Approved by

2/3/16

Date



WHITFIELD

Contract No.:
30090
Client ref:

SDG: 160219-37
Job: H_WSP_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378-S01
Report Number: 352717
Superseded Report: 352446

Appendix

General

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- Samples will be run in duplicate upon request, but an additional charge may be incurred
- If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
- With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.
- If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- NDP - No determination possible due to insufficient/unsuitable sample.
- Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.
- Results relate only to the items tested.
- LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.
- Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

- For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
\$	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix F

CBR/DCP RESULTS

IN SITU CALIFORNIA BEARING RATIO

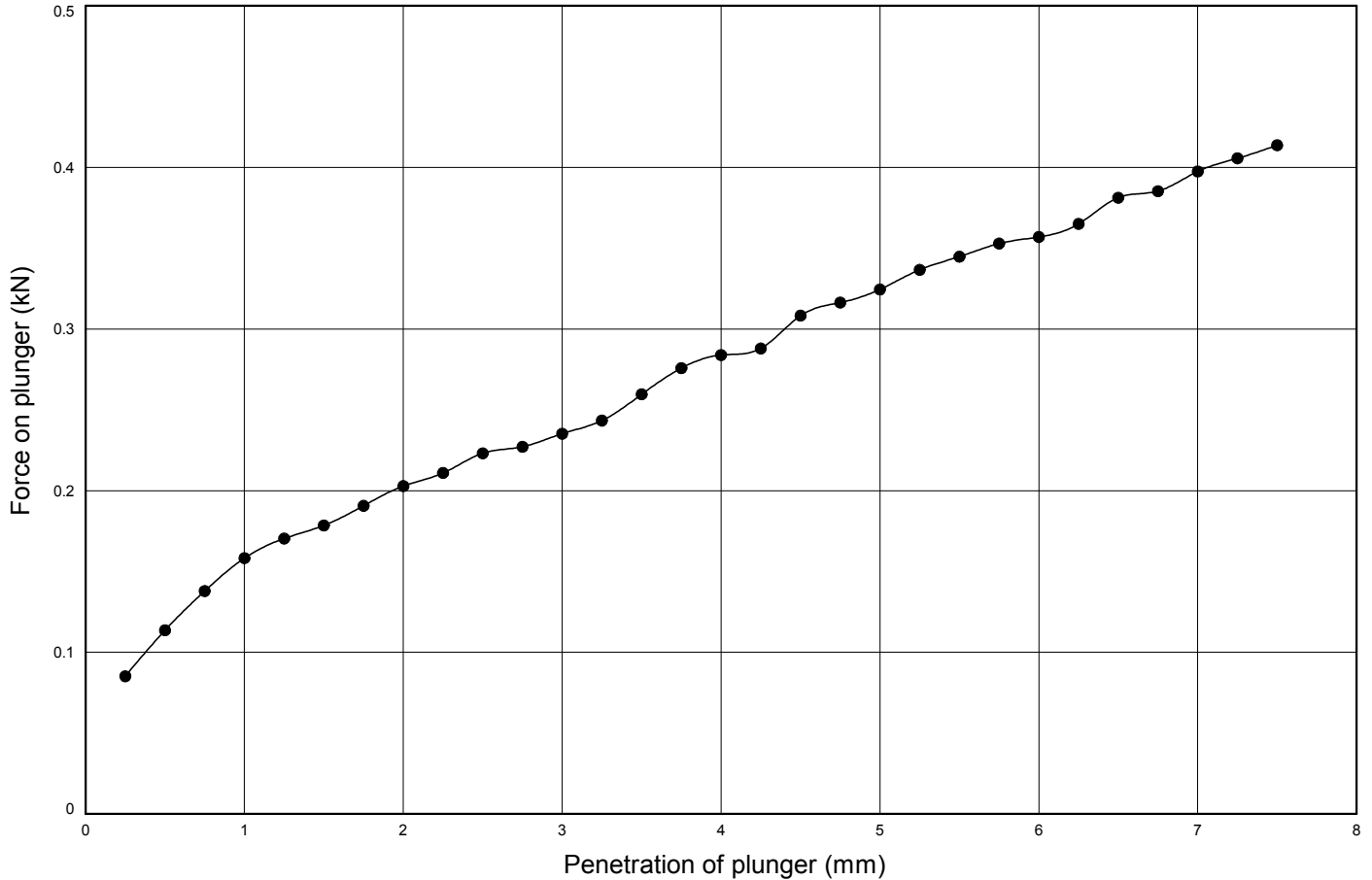


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 1
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY
 with rare rootlets



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test	10/02/2016	remarks:		
surcharge mass (kg)	10			
moisture content (%)	28			
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.22	1.7	1.7	
5.0	0.32	1.6		
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

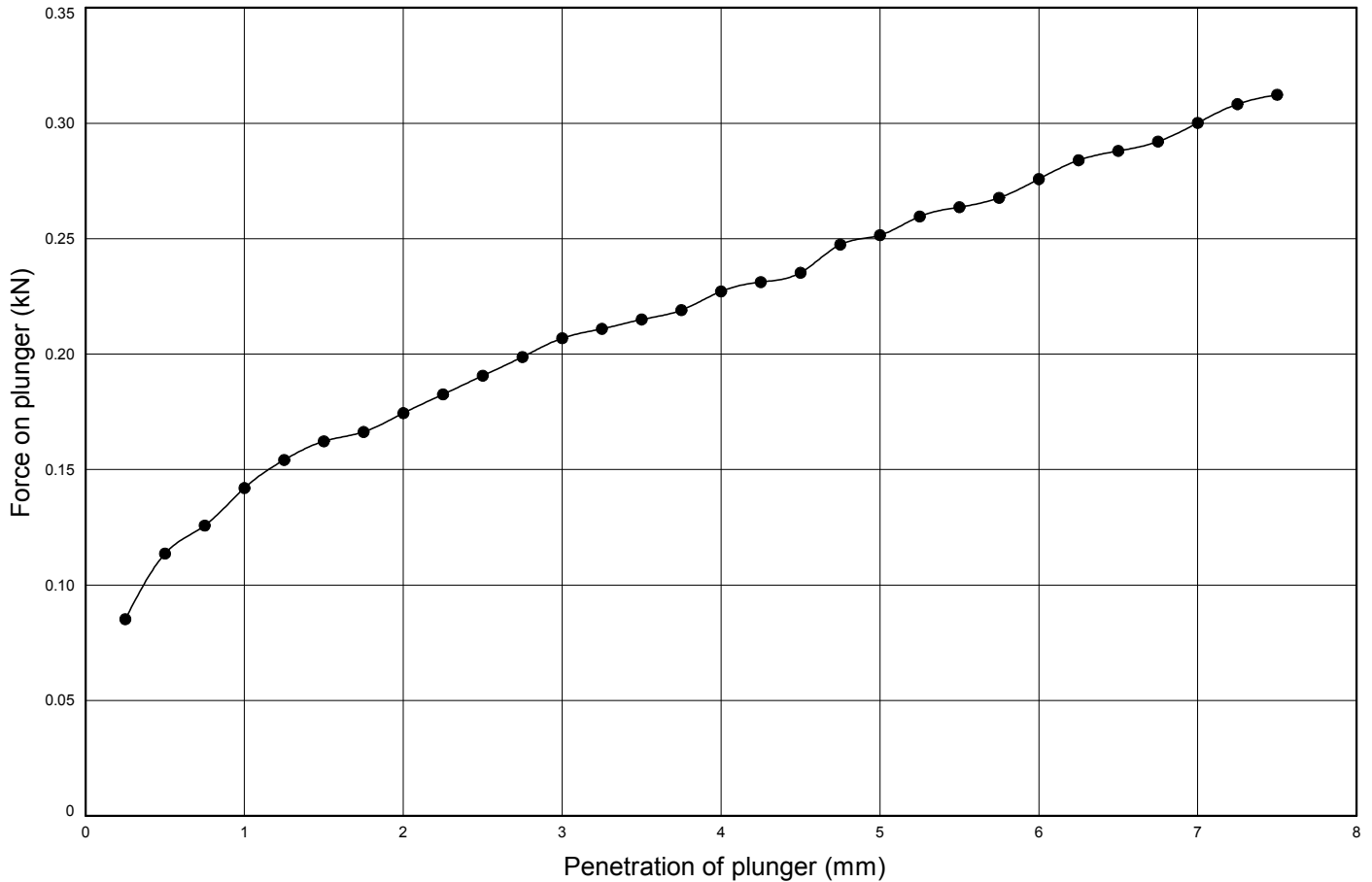


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 104
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		34		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.19	1.4		
5.0	0.25	1.3		
			1.4	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

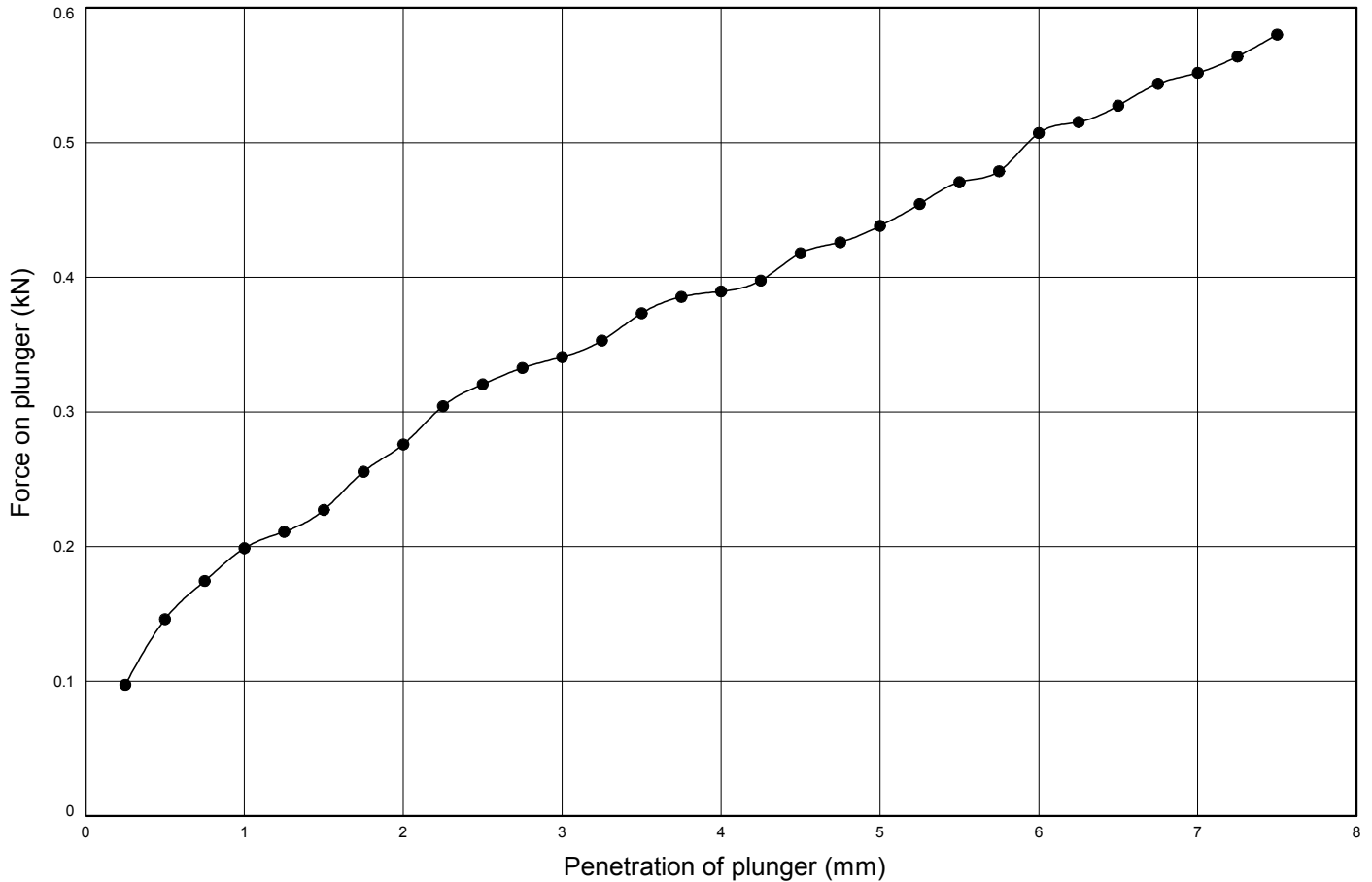


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 105
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		22		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.32	2.4		
5.0	0.44	2.2		
			2.4	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

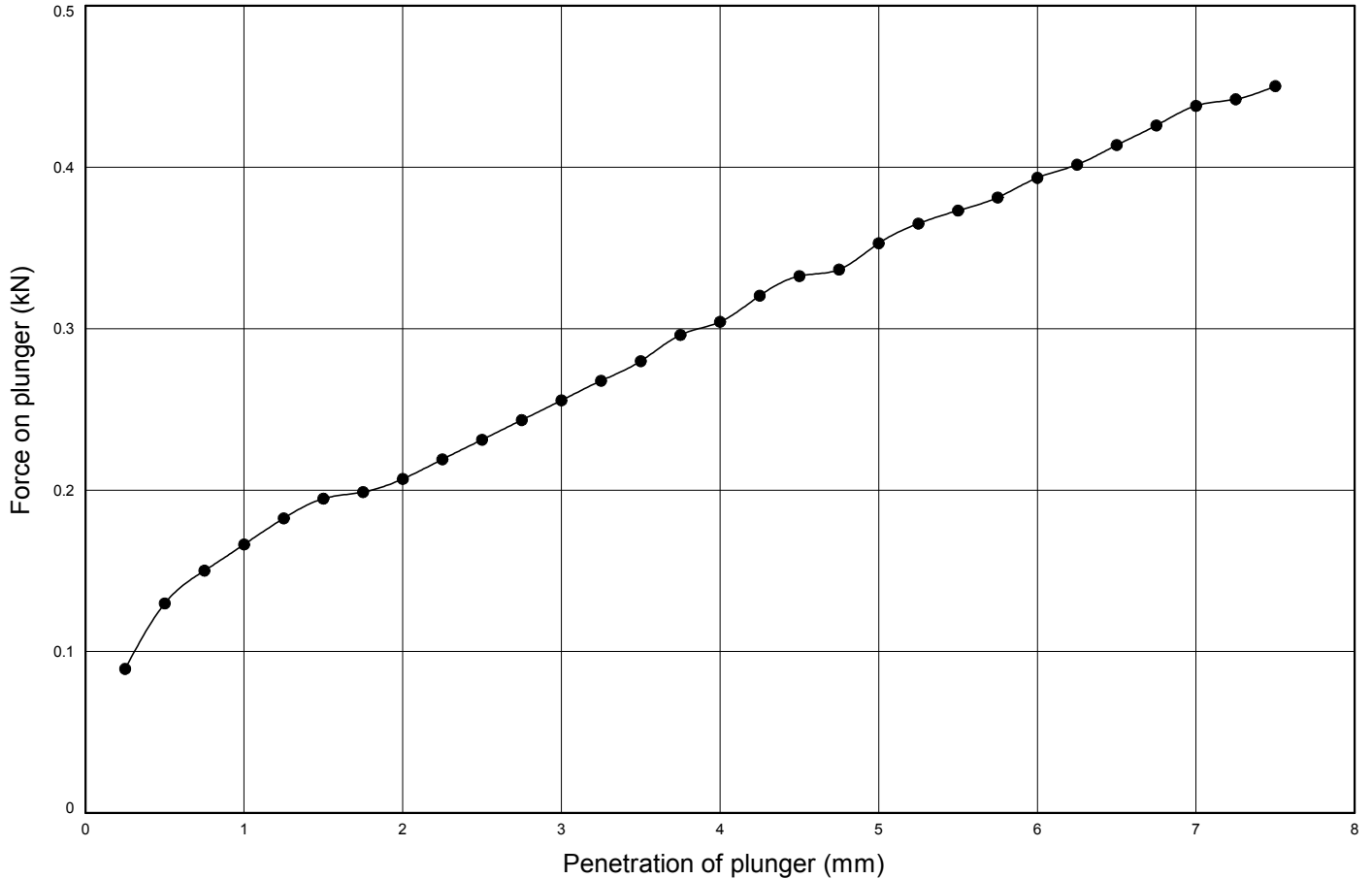


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 106
TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS			
date of test	10/02/2016	remarks:	
surcharge mass (kg)	10		
moisture content (%)	31		
RESULTS			
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.23	1.8	1.8
5.0	0.35	1.8	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration			
CONTRACT		CHECKED	
31634		NP	

IN SITU CALIFORNIA BEARING RATIO

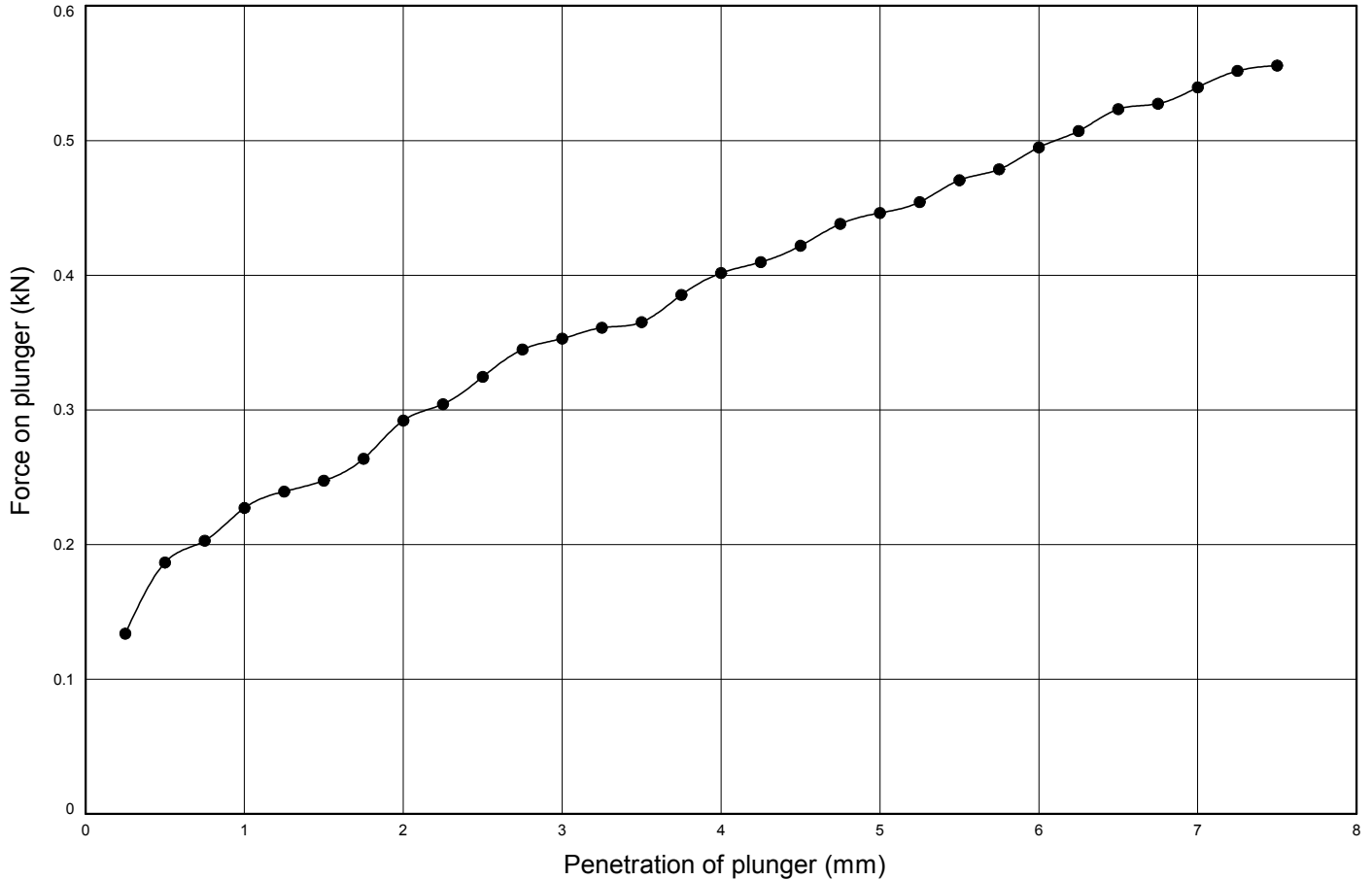


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 107
TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		27		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.32	2.5		
5.0	0.45	2.2		
			2.5	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

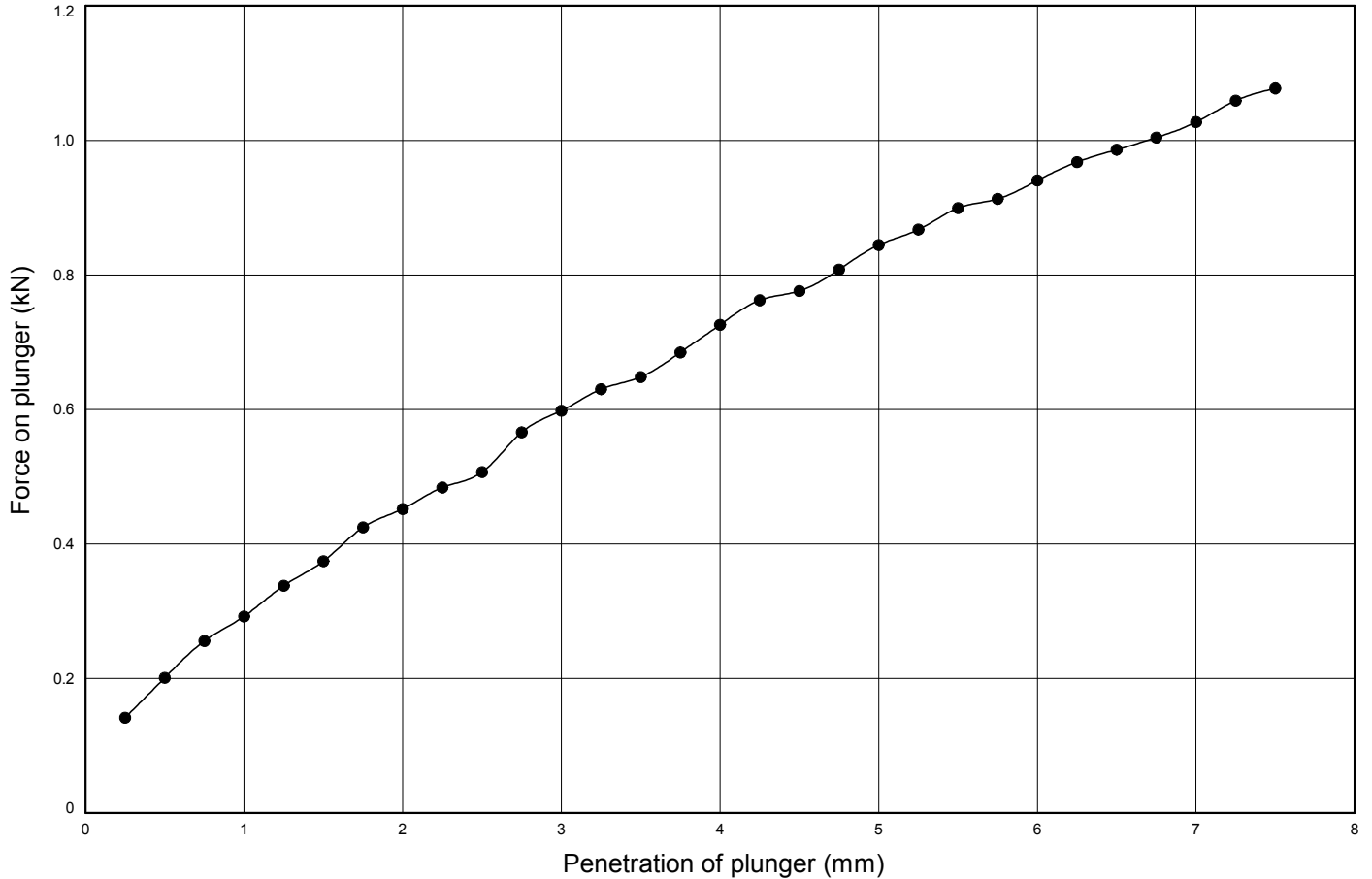


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 108
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS			
date of test		10/02/2016	remarks:
surcharge mass (kg)		10	
moisture content (%)		26	
RESULTS			
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.51	3.8	4.2
5.0	0.84	4.2	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration			
CONTRACT		CHECKED	
31634		NP	

IN SITU CALIFORNIA BEARING RATIO

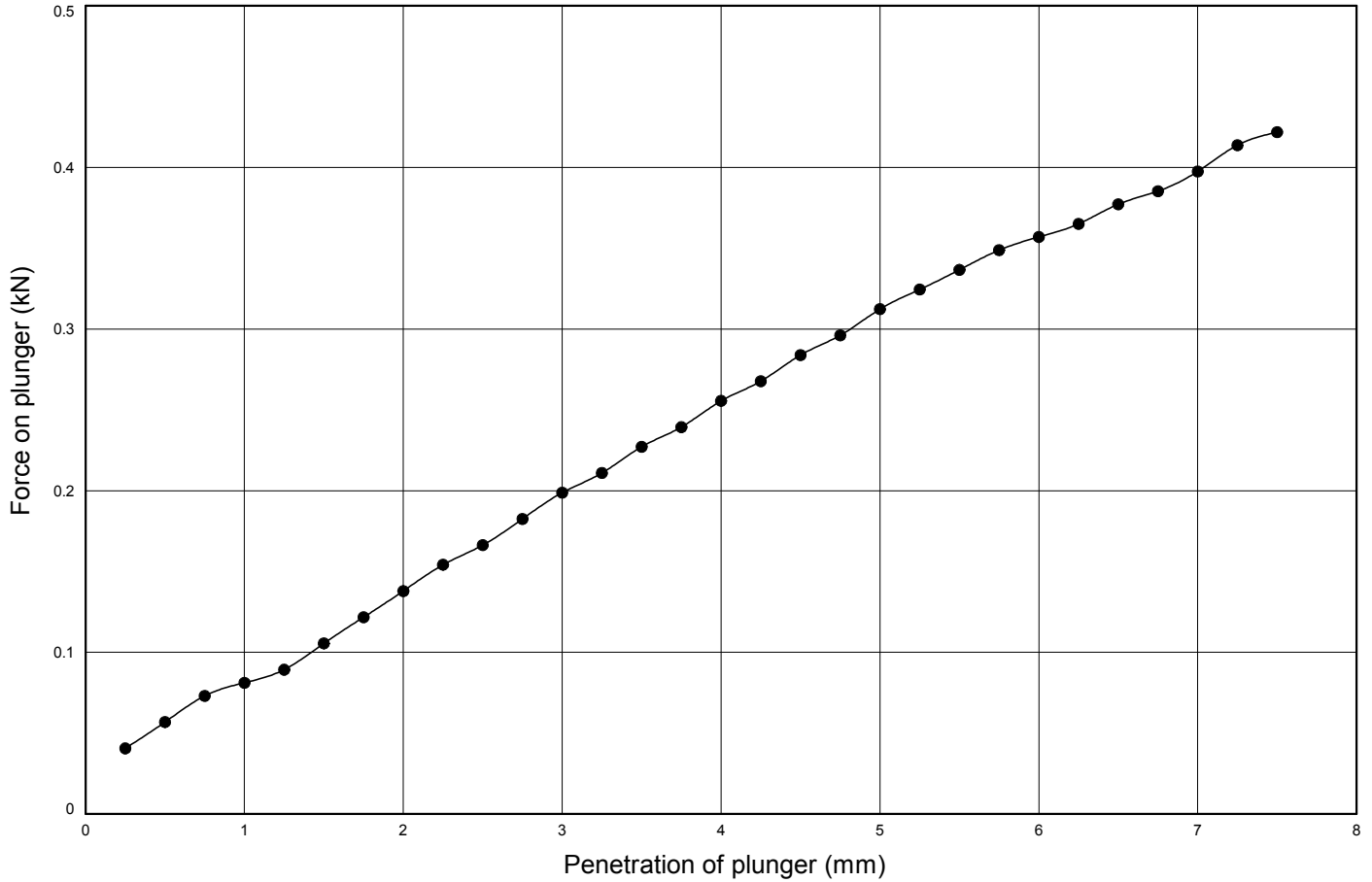


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 109
TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS			
date of test		11/02/2016	remarks:
surcharge mass (kg)		10	
moisture content (%)		36	
RESULTS			
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.17	1.3	1.6
5.0	0.31	1.6	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration			
CONTRACT		CHECKED	
31634		NP	

IN SITU CALIFORNIA BEARING RATIO

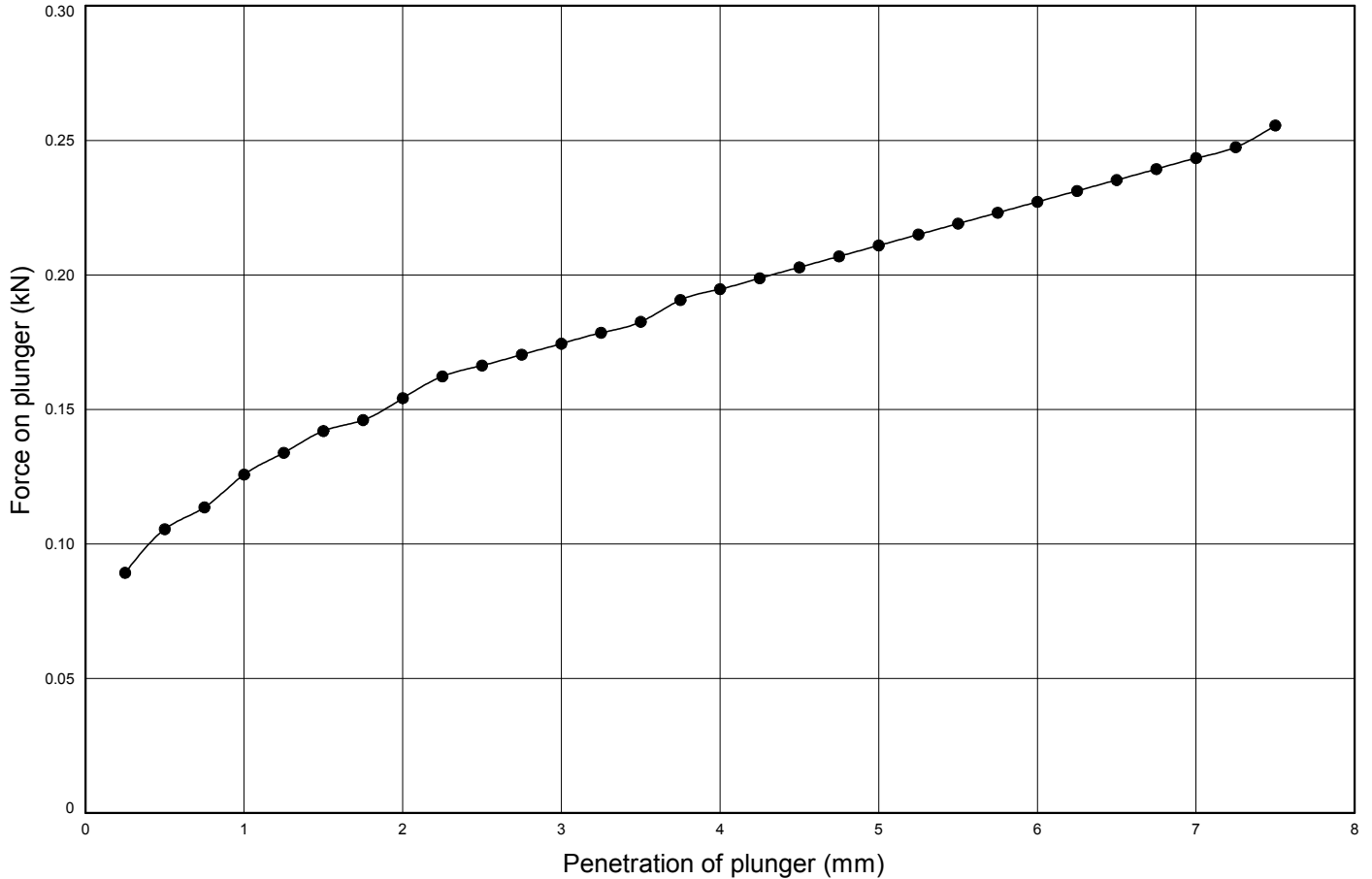


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 2
TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		30		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.17	1.3		
5.0	0.21	1.1		
			1.3	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

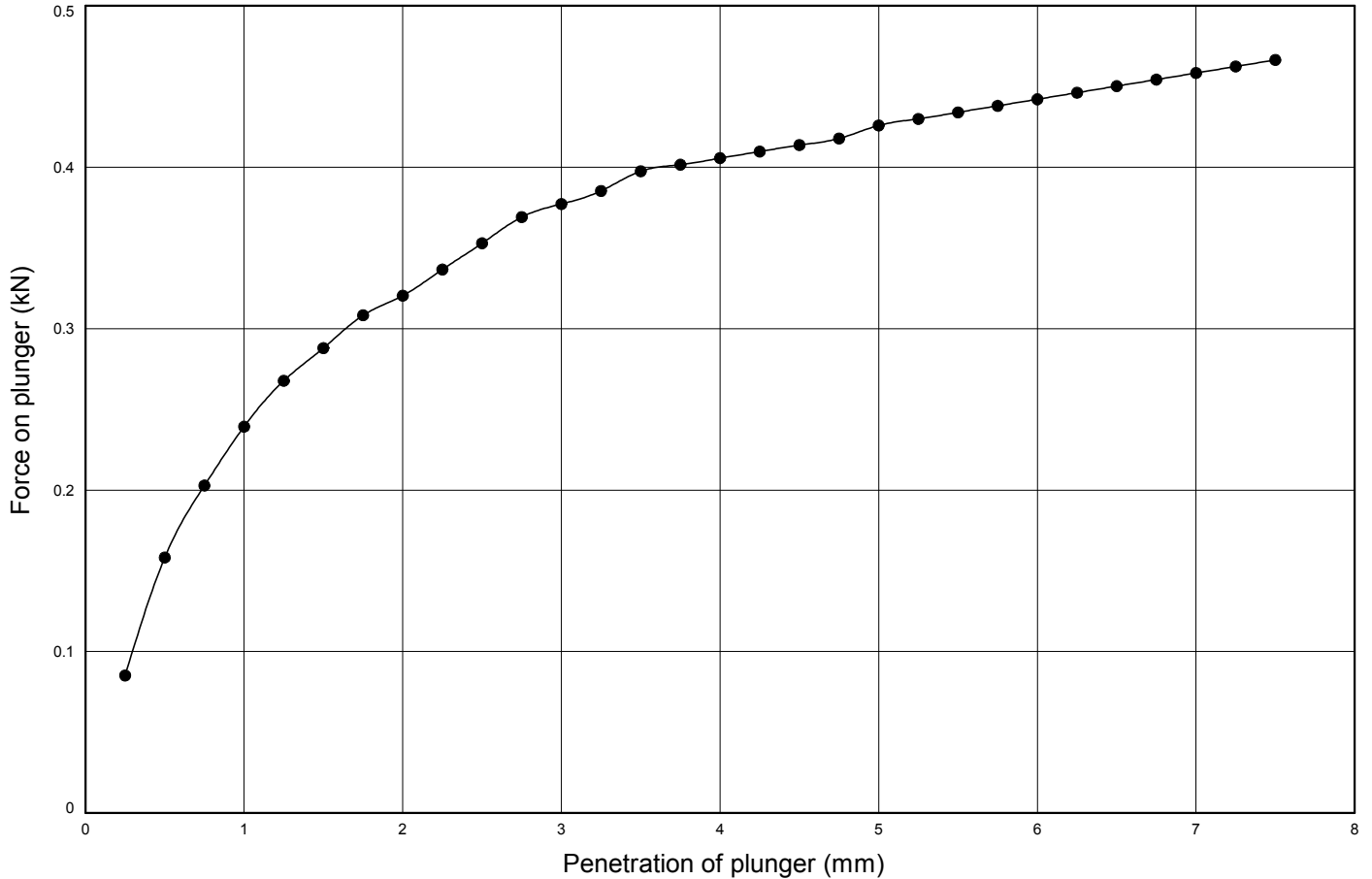


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 3
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		25		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.35	2.7		
5.0	0.43	2.1		
			2.7	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				

CONTRACT 31634	CHECKED NP
--------------------------	----------------------

IN SITU CALIFORNIA BEARING RATIO

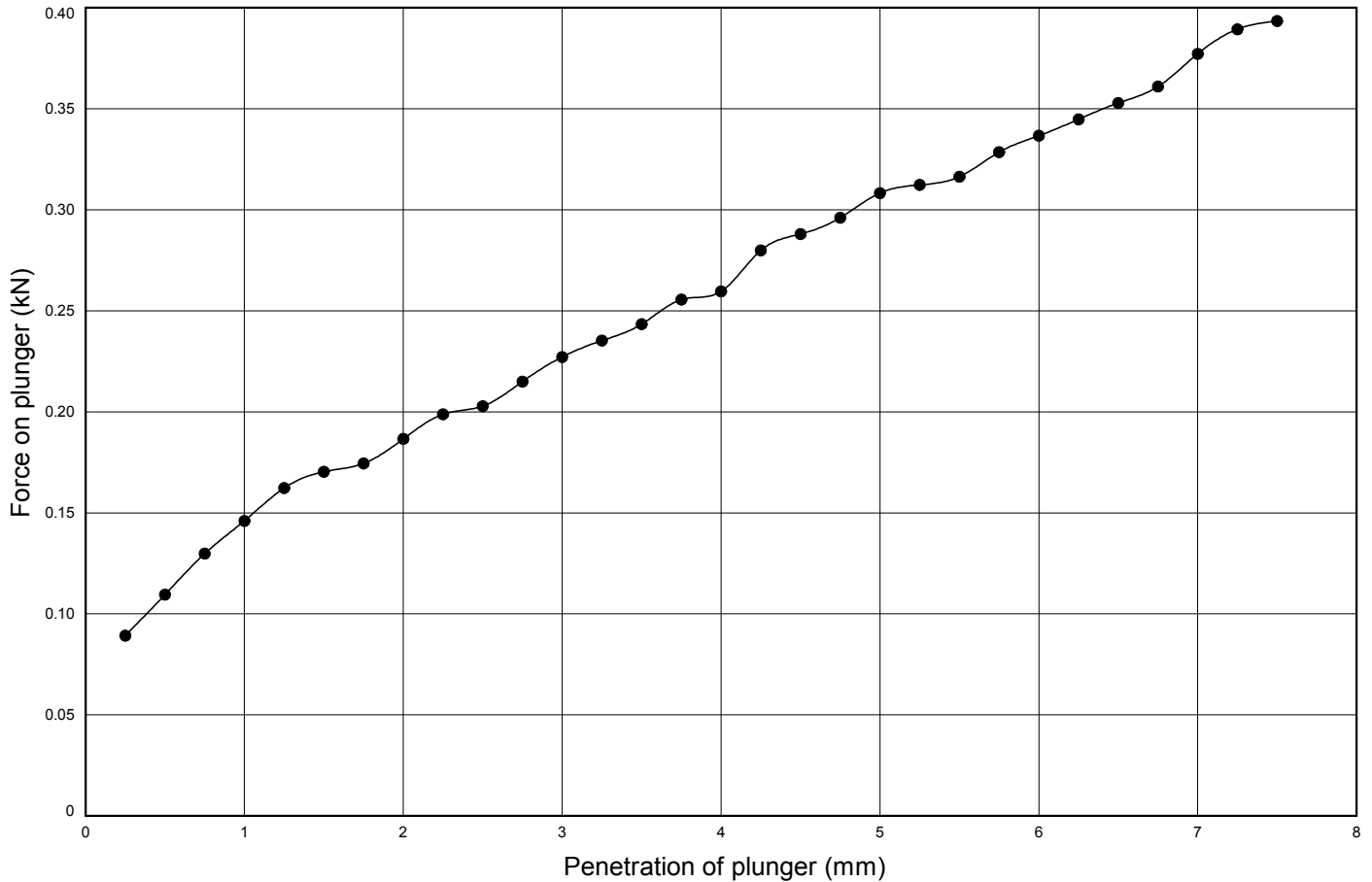


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 4
TEST DEPTH (m) 0.30

DESCRIPTION Brown slightly sandy slightly gravelly CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		09/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		30		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.20	1.5		
5.0	0.31	1.5		
			1.5	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

IN SITU CALIFORNIA BEARING RATIO

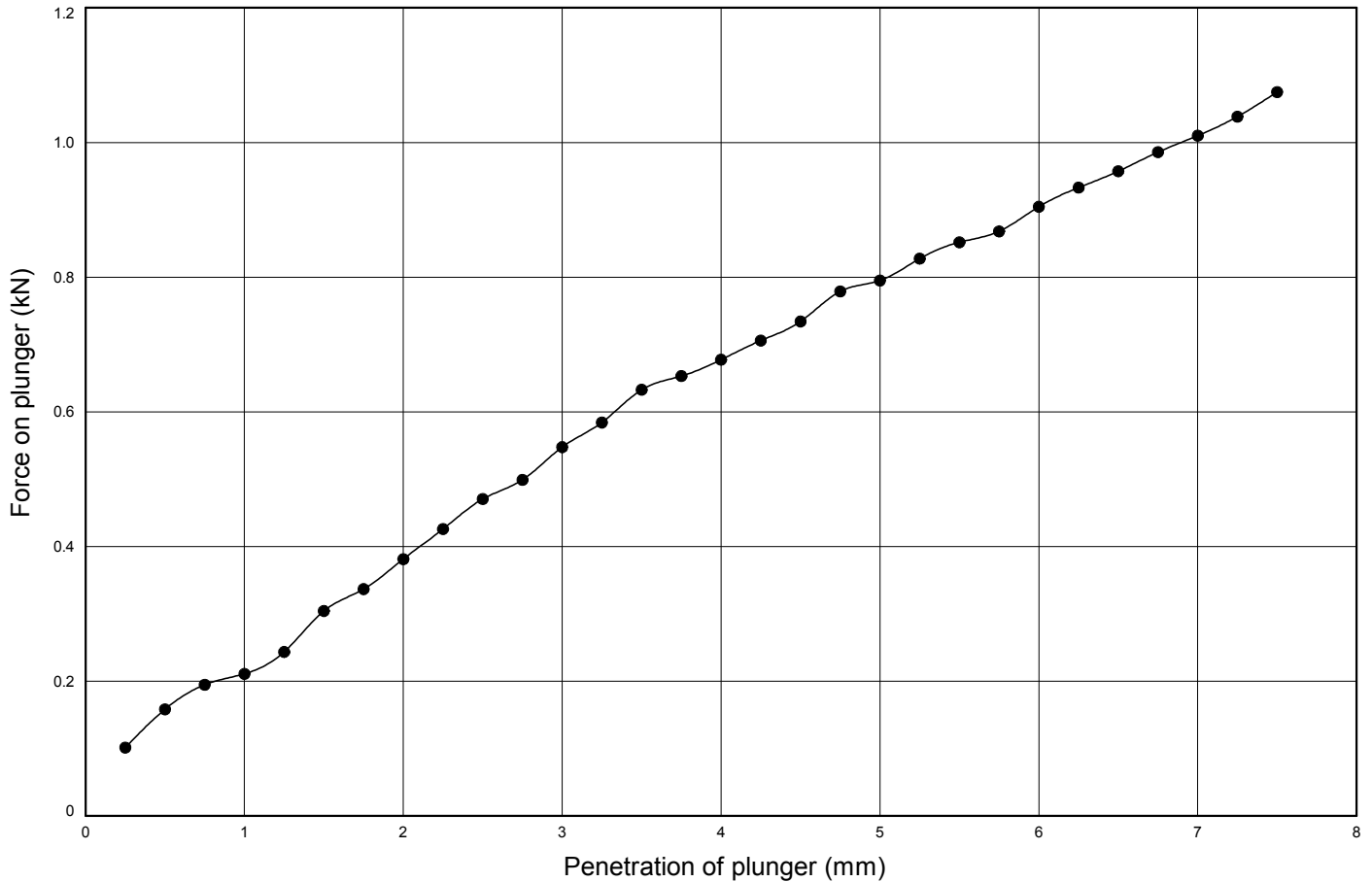


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 5
TEST DEPTH (m) 0.30

DESCRIPTION Brown slightly sandy slightly gravelly silty CLAY.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		09/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		28		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.47	3.6		
5.0	0.80	4.0		
			4.0	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT	CHECKED
			31634	NP

IN SITU CALIFORNIA BEARING RATIO

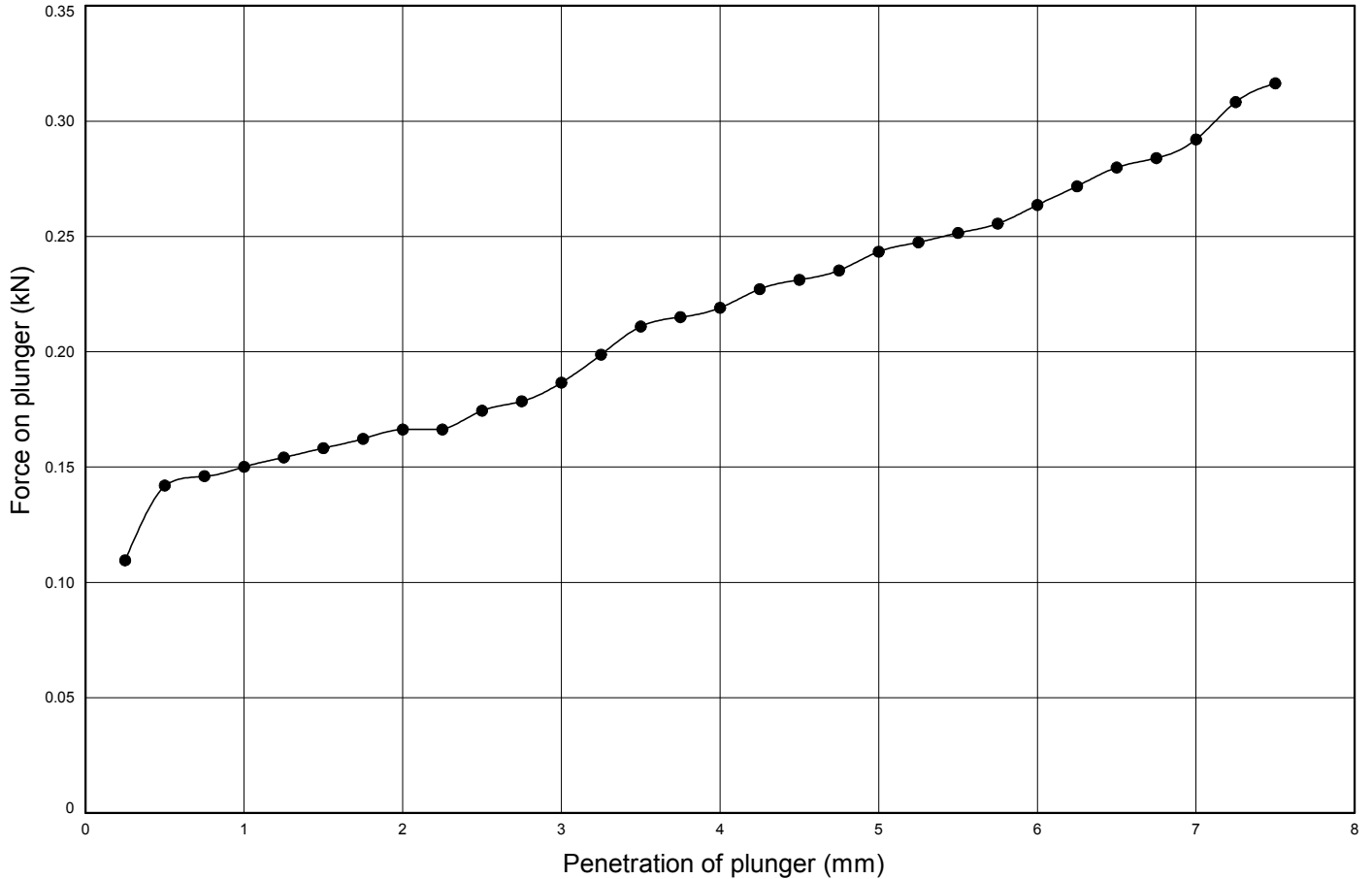


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
 SITE WHITFIELD

BH/TP No. CBR 6
 TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly silty CLAY.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test	11/02/2016	remarks:		
surcharge mass (kg)	10			
moisture content (%)	26			
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.17	1.3	1.3	
5.0	0.24	1.2		
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
CONTRACT			CHECKED	
31634			NP	

IN SITU CALIFORNIA BEARING RATIO

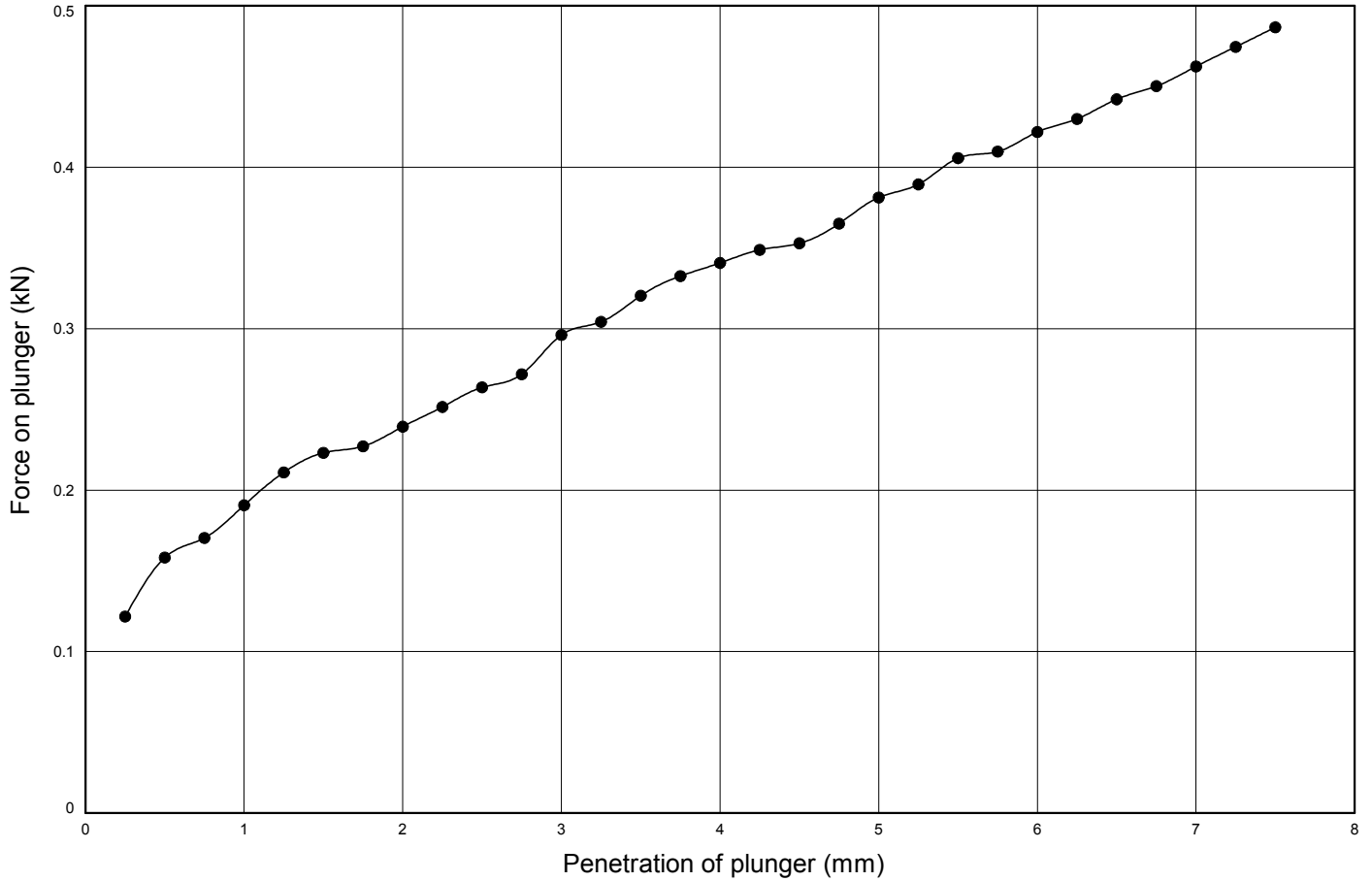


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 7
TEST DEPTH (m) 0.30

DESCRIPTION Orangish brown slightly sandy slightly gravelly CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		09/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		26		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.26	2.0		
5.0	0.38	1.9		
			2.0	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				

CONTRACT 31634	CHECKED NP
--------------------------	----------------------

IN SITU CALIFORNIA BEARING RATIO

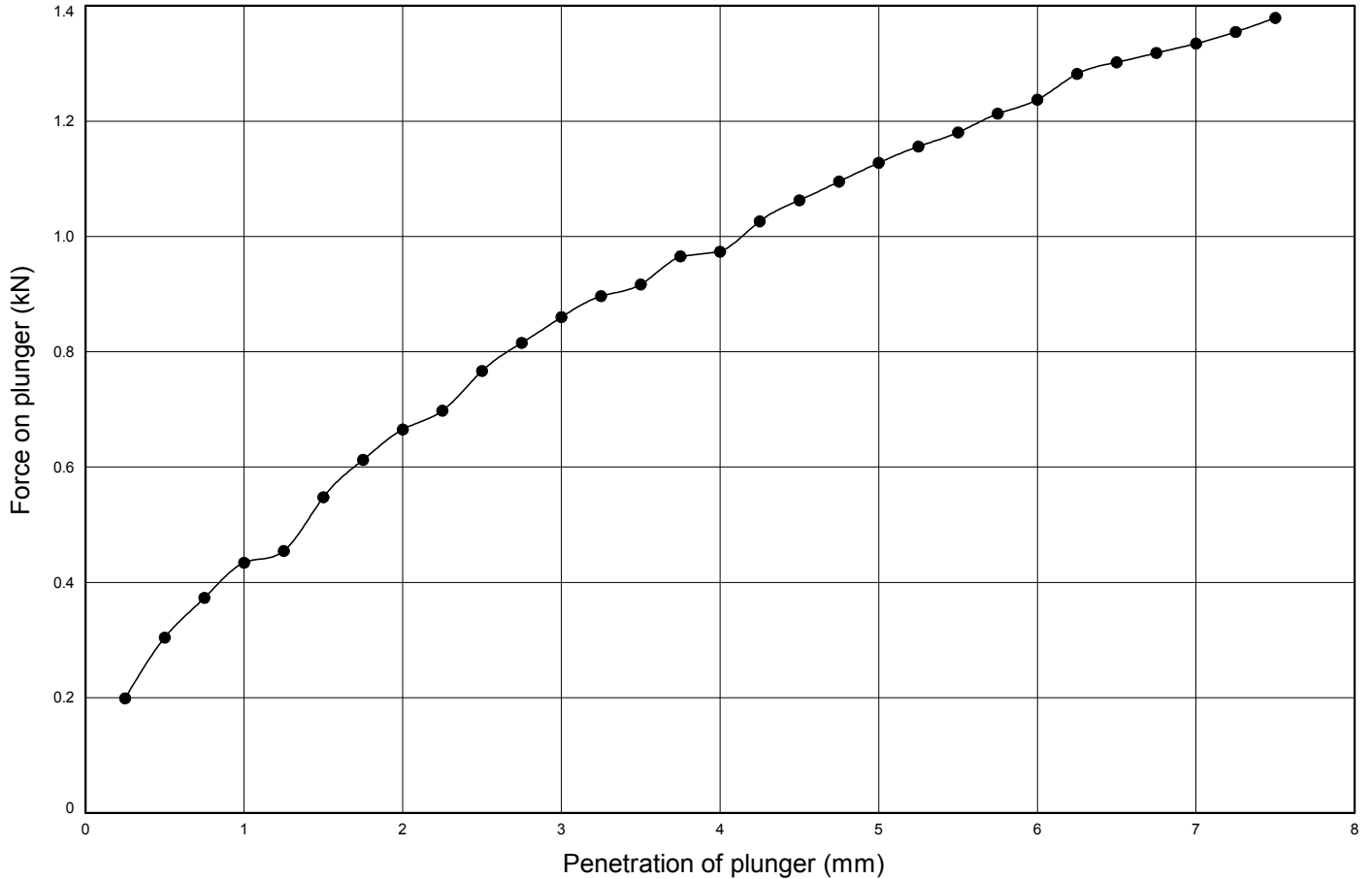


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 8
TEST DEPTH (m) 0.30

DESCRIPTION Brown slightly sandy slightly gravelly CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS			
date of test		09/02/2016	remarks:
surcharge mass (kg)		10	
moisture content (%)		25	
RESULTS			
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)
2.5	0.77	5.8	5.8
5.0	1.13	5.6	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration			

CONTRACT 31634	CHECKED NP
--------------------------	----------------------

IN SITU CALIFORNIA BEARING RATIO

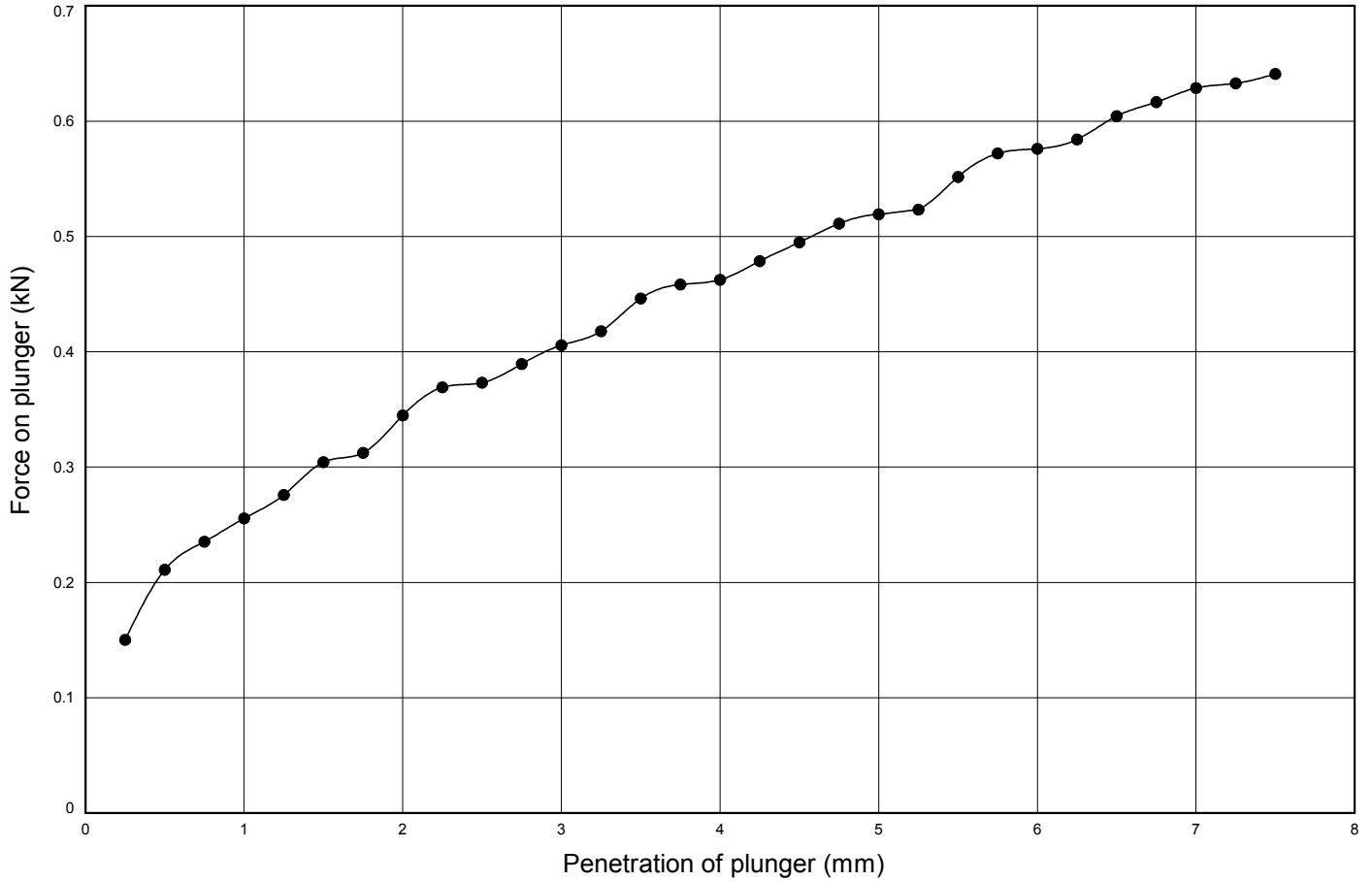


BS.1377 : Part 9 : 1990

CLIENT WSP GROUP
SITE WHITFIELD

BH/TP No. CBR 9
TEST DEPTH (m) 0.30

DESCRIPTION Brown slightly sandy slightly gravelly silty CLAY with rare rootlets.



Geotechnical Engineering Ltd., Tel. 01452 527743 31634.GPJ TRIAL.JH.GDT GEOTECH2.GLB 19/2/16

TEST DETAILS				
date of test		10/02/2016		remarks:
surcharge mass (kg)		10		
moisture content (%)		30		
RESULTS				
penetration of plunger (mm)	force on plunger (kN)	calculated CBR (%)	CBR value (%)	
2.5	0.37	2.8		
5.0	0.52	2.6		
			2.8	
CBR value taken is the higher of the forces (%) corresponding to 2.50mm and 5.00mm penetration				
			CONTRACT 31634	CHECKED NP

DYNAMIC CONE PENETROMETER TESTING



CLIENT WSP GROUP

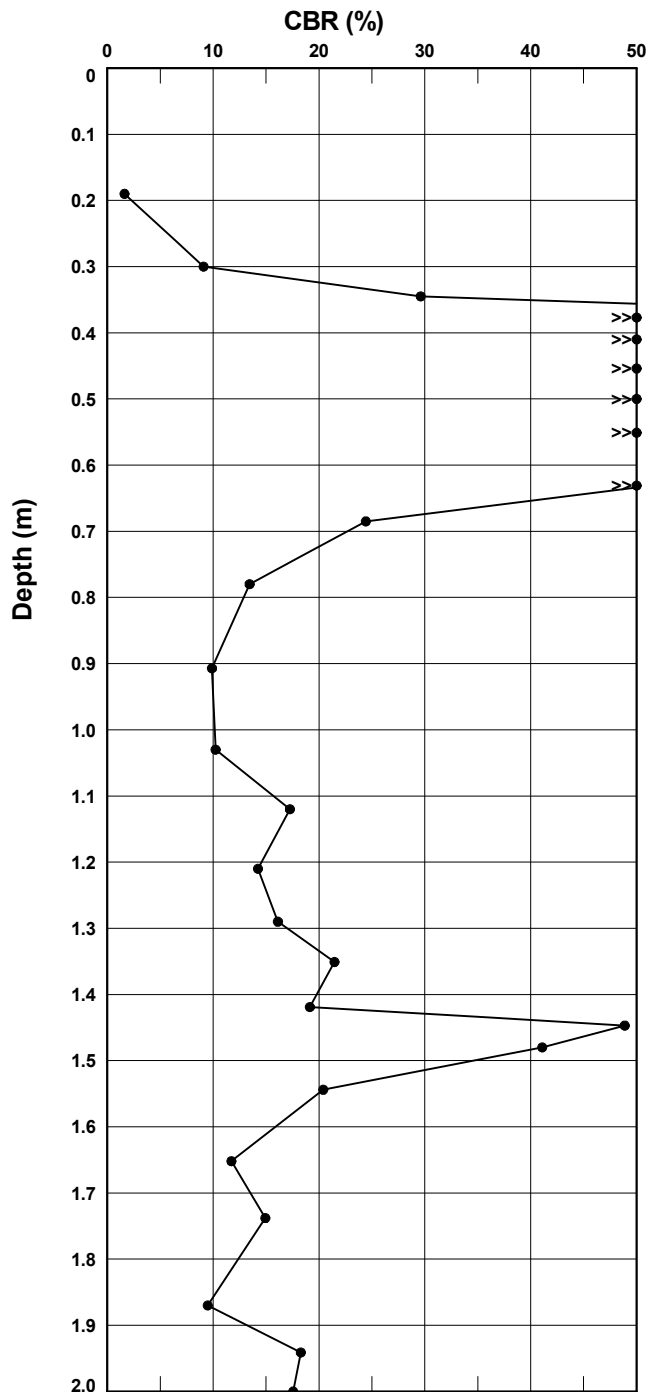
SITE WHITFIELD

DATE 10 February 2016

CBR 10

Initial scale reading (mm) 150 Datum bgl (mm) 50

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	290	140	0.19	140	1.6
4	400	110	0.30	28	9.1
5	445	45	0.35	9	29.6
10	477	32	0.38	3	88.3
10	510	33	0.41	3	85.5
10	554	44	0.45	4	63.1
10	600	46	0.50	5	60.2
15	651	51	0.55	3	82.8
15	731	80	0.63	5	51.5
5	785	54	0.69	11	24.4
5	880	95	0.78	19	13.4
5	1007	127	0.91	25	9.9
5	1130	123	1.03	25	10.2
6	1220	90	1.12	15	17.3
5	1310	90	1.21	18	14.2
5	1390	80	1.29	16	16.1
5	1451	61	1.35	12	21.5
5	1519	68	1.42	14	19.1
5	1547	28	1.45	6	48.9
5	1580	33	1.48	7	41.1
5	1644	64	1.54	13	20.4
5	1752	108	1.65	22	11.7
5	1838	86	1.74	17	14.9
5	1970	132	1.87	26	9.5
5	2041	71	1.94	14	18.3
4	2100	59	2.00	15	17.6



Remarks:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.
 CBR correlation based on the relationship $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 * \text{Log}_{10}(\text{mm/blow})$ developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

CONTRACT	CHECKED
31634	NP

Appendix G

INFILTRATION TEST RESULTS

Geotechnical Engineering Limited
SOAKAWAY TEST



CLIENT WSP GROUP
 SITE Whitfield
 DATE 10/02/2016

TRIAL PIT **IN01**

<p>TEST 1</p> <p>LENGTH 1.80 m BREADTH 0.55 m DEPTH 1.90 m WATER LEVEL Dry FILL LEVEL 1.25 m</p> <p>V_{p75-25} 0.32 m³ a_{p50} 2.52 m² t_{p75-25} 25 min</p> <p>soil infiltration rate, f 8.5×10^{-5} ms⁻¹</p>	<p style="text-align: center;">Time (minutes)</p> <table border="1"> <caption>Data for Test 1 Graph</caption> <thead> <tr> <th>Time (min)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.25</td></tr> <tr><td>5</td><td>1.32</td></tr> <tr><td>10</td><td>1.38</td></tr> <tr><td>15</td><td>1.52</td></tr> <tr><td>25</td><td>1.60</td></tr> <tr><td>35</td><td>1.72</td></tr> <tr><td>45</td><td>1.82</td></tr> <tr><td>60</td><td>1.90</td></tr> </tbody> </table>	Time (min)	Depth to water (m)	0	1.25	5	1.32	10	1.38	15	1.52	25	1.60	35	1.72	45	1.82	60	1.90
Time (min)	Depth to water (m)																		
0	1.25																		
5	1.32																		
10	1.38																		
15	1.52																		
25	1.60																		
35	1.72																		
45	1.82																		
60	1.90																		
<p>TEST 2</p> <p>LENGTH 1.80 m BREADTH 0.55 m DEPTH 1.90 m WATER LEVEL Dry m FILL LEVEL 1.30 m</p> <p>V_{p75-25} 0.30 m³ a_{p50} 2.40 m² t_{p75-25} 14 min</p> <p>soil infiltration rate, f 1.5×10^{-4} ms⁻¹</p>	<p style="text-align: center;">Time (minutes)</p> <table border="1"> <caption>Data for Test 2 Graph</caption> <thead> <tr> <th>Time (min)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.30</td></tr> <tr><td>5</td><td>1.35</td></tr> <tr><td>10</td><td>1.48</td></tr> <tr><td>15</td><td>1.58</td></tr> <tr><td>20</td><td>1.68</td></tr> <tr><td>25</td><td>1.80</td></tr> <tr><td>35</td><td>1.88</td></tr> <tr><td>45</td><td>1.90</td></tr> </tbody> </table>	Time (min)	Depth to water (m)	0	1.30	5	1.35	10	1.48	15	1.58	20	1.68	25	1.80	35	1.88	45	1.90
Time (min)	Depth to water (m)																		
0	1.30																		
5	1.35																		
10	1.48																		
15	1.58																		
20	1.68																		
25	1.80																		
35	1.88																		
45	1.90																		
<p>TEST 3</p> <p>LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f * x 10[*] ms⁻¹</p>	<p style="text-align: center;">Time (minutes)</p>																		
<p>Remarks Test carried out in general accordance with BRE 365 (2007). Insufficient time for three fillings.</p>		<p>CONTRACT 31634</p>	<p>CHECKED CT</p>																

06/960



CLIENT WSP GROUP
 SITE Whitfield
 DATE 08/02/2016

TRIAL PIT **IN02**

<p>TEST 1</p> <p>LENGTH 2.30 m BREADTH 0.70 m DEPTH 2.95 m WATER LEVEL Dry FILL LEVEL 1.28 m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f ms⁻¹ Insufficient take to calculate infiltration rate. Minor sidewall failure at 5 minutes.</p>		
<p>TEST 2</p> <p>LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f * x 10[*] ms⁻¹</p>		
<p>TEST 3</p> <p>LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f * x 10[*] ms⁻¹</p>		
<p>Remarks Test carried out in general accordance with BRE 365 (2007). Test abandoned due to insufficient take.</p>	<p>CONTRACT 31634</p>	<p>CHECKED CT</p>

06/06/10



CLIENT WSP GROUP
 SITE Whitfield
 DATE 12/02/2016

TRIAL PIT **IN03**

<p>TEST 1</p> <p>LENGTH 2.45 m BREADTH 0.65 m DEPTH 2.50 m WATER LEVEL Dry FILL LEVEL 1.53 m</p> <p>V_{p75-25} 0.77 m³ a_{p50} 4.60 m² t_{p75-25} min</p> <p>soil infiltration rate, f ms⁻¹ Insufficient take to calculate infiltration rate</p>			
<p>TEST 1</p> <p>LENGTH 2.45 m BREADTH 0.65 m DEPTH 2.50 m WATER LEVEL Dry m FILL LEVEL 1.53 m</p> <p>V_{p75-25} 0.41 m³ a_{p50} 3.21 m² t_{p75-25} 33 min</p> <p>soil infiltration rate, f 6.5x 10⁻⁵ ms⁻¹ Calculated over depth range achieved for test.</p>			
<p>TEST 3</p> <p>LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f ms⁻¹</p>			
<p>Remarks Test carried out in general accordance with BRE 365 (2007). Insufficient time for three fillings.</p>		<p>CONTRACT 31634</p>	<p>CHECKED CT</p>

06/960



CLIENT WSP GROUP
 SITE Whitfield
 DATE 12/02/2016

TRIAL PIT **IN04**

<p>TEST 1 LENGTH 2.30 m BREADTH 0.65 m DEPTH 2.50 m WATER LEVEL Dry FILL LEVEL 1.47 m</p> <p>V_{p75-25} 0.77 m³ a_{p50} 4.53 m² t_{p75-25} min</p> <p>soil infiltration rate, f ms⁻¹ Insufficient take to calculate infiltration rate</p>			
<p>TEST 1 LENGTH 2.30 m BREADTH 0.65 m DEPTH 2.50 m WATER LEVEL Dry m FILL LEVEL 1.47 m</p> <p>V_{p75-25} 0.46 m³ a_{p50} 3.30 m² t_{p75-25} 40 min</p> <p>soil infiltration rate, f 5.8x 10⁻⁵ ms⁻¹ Calculated over depth range achieved for test.</p>			
<p>TEST 3 LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f ms⁻¹</p>			
<p>Remarks Test carried out in general accordance with BRE 365 (2007).</p>		<p>CONTRACT 31634</p>	<p>CHECKED CT</p>

06/960



CLIENT WSP GROUP
 SITE Whitfield
 DATE 10/02/2016

TRIAL PIT **IN05**

<p>TEST 1</p> <p>LENGTH 1.90 m BREADTH 0.50 m DEPTH 1.95 m WATER LEVEL Dry FILL LEVEL 1.20 m</p> <p>V_{p75-25} 0.36 m³ a_{p50} 2.71 m² t_{p75-25} 54 min</p> <p>soil infiltration rate, f 4.0×10^{-5} ms⁻¹</p>	<table border="1"> <caption>Data for Test 1 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.20</td></tr> <tr><td>5</td><td>1.25</td></tr> <tr><td>10</td><td>1.32</td></tr> <tr><td>15</td><td>1.45</td></tr> <tr><td>25</td><td>1.55</td></tr> <tr><td>35</td><td>1.60</td></tr> <tr><td>45</td><td>1.65</td></tr> <tr><td>55</td><td>1.75</td></tr> <tr><td>65</td><td>1.78</td></tr> <tr><td>75</td><td>1.85</td></tr> <tr><td>85</td><td>1.95</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	1.20	5	1.25	10	1.32	15	1.45	25	1.55	35	1.60	45	1.65	55	1.75	65	1.78	75	1.85	85	1.95
Time (minutes)	Depth to water (m)																								
0	1.20																								
5	1.25																								
10	1.32																								
15	1.45																								
25	1.55																								
35	1.60																								
45	1.65																								
55	1.75																								
65	1.78																								
75	1.85																								
85	1.95																								
<p>TEST 2</p> <p>LENGTH 1.90 m BREADTH 0.50 m DEPTH 1.95 m WATER LEVEL Dry m FILL LEVEL 1.25 m</p> <p>V_{p75-25} 0.33 m³ a_{p50} 2.63 m² t_{p75-25} 39 min</p> <p>soil infiltration rate, f 5.4×10^{-5} ms⁻¹</p>	<table border="1"> <caption>Data for Test 2 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.25</td></tr> <tr><td>5</td><td>1.35</td></tr> <tr><td>10</td><td>1.45</td></tr> <tr><td>15</td><td>1.50</td></tr> <tr><td>20</td><td>1.55</td></tr> <tr><td>30</td><td>1.65</td></tr> <tr><td>40</td><td>1.70</td></tr> <tr><td>60</td><td>1.85</td></tr> <tr><td>75</td><td>1.95</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	1.25	5	1.35	10	1.45	15	1.50	20	1.55	30	1.65	40	1.70	60	1.85	75	1.95				
Time (minutes)	Depth to water (m)																								
0	1.25																								
5	1.35																								
10	1.45																								
15	1.50																								
20	1.55																								
30	1.65																								
40	1.70																								
60	1.85																								
75	1.95																								
<p>TEST 3</p> <p>LENGTH m BREADTH m DEPTH m WATER LEVEL m FILL LEVEL m</p> <p>V_{p75-25} m³ a_{p50} m² t_{p75-25} min</p> <p>soil infiltration rate, f * x 10[*] ms⁻¹</p>																									
<p>Remarks Test carried out in general accordance with BRE 365 (2007). Insufficient time for three fillings.</p>		<p>CONTRACT 31634</p>	<p>CHECKED CT</p>																						

06/960



CLIENT WSP GROUP
 SITE Whitfield
 DATE 11/02/2016

TRIAL PIT **IN06**

<p>TEST 1</p> <p>LENGTH 2.75 m BREADTH 0.70 m DEPTH 1.95 m WATER LEVEL Dry FILL LEVEL 0.98 m</p> <p>V_{p75-25} 0.93 m³ a_{p50} 5.27 m² t_{p75-25} 59 min</p> <p>soil infiltration rate, f 5.0x10⁻⁵ ms⁻¹</p>		
<p>TEST 2</p> <p>LENGTH 2.75 m BREADTH 0.70 m DEPTH 1.95 m WATER LEVEL Dry m FILL LEVEL 0.98 m</p> <p>V_{p75-25} 0.93 m³ a_{p50} 5.27 m² t_{p75-25} 52 min</p> <p>soil infiltration rate, f 5.7x10⁻⁵ ms⁻¹</p>		
<p>TEST 3</p> <p>LENGTH 2.75 m BREADTH 0.70 m DEPTH 1.95 m WATER LEVEL Dry m FILL LEVEL 1.00 m</p> <p>V_{p75-25} 0.914 m³ a_{p50} 5.200 m² t_{p75-25} 45 min</p> <p>soil infiltration rate, f 1.0x 10⁻⁵ ms⁻¹</p>		
<p>Remarks Test carried out in general accordance with BRE 365 (2007).</p>	<p>CONTRACT 31634</p>	<p>CHECKED CT</p>

06/960



CLIENT WSP GROUP
 SITE Whitfield
 DATE 10/02/2016

TRIAL PIT **IN07**

<p>TEST 1</p> <p>LENGTH 2.80 m BREADTH 0.70 m DEPTH 2.95 m WATER LEVEL Dry FILL LEVEL 2.10 m</p> <p>V_{p75-25} 0.83 m³ a_{p50} 4.94 m² t_{p75-25} 23 min</p> <p>soil infiltration rate, f 1.2×10^{-4} ms⁻¹</p>	<table border="1"> <caption>Data for Test 1 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>2.10</td></tr> <tr><td>2</td><td>2.20</td></tr> <tr><td>5</td><td>2.35</td></tr> <tr><td>10</td><td>2.45</td></tr> <tr><td>25</td><td>2.60</td></tr> <tr><td>40</td><td>2.80</td></tr> <tr><td>55</td><td>2.95</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	2.10	2	2.20	5	2.35	10	2.45	25	2.60	40	2.80	55	2.95				
Time (minutes)	Depth to water (m)																				
0	2.10																				
2	2.20																				
5	2.35																				
10	2.45																				
25	2.60																				
40	2.80																				
55	2.95																				
<p>TEST 2</p> <p>LENGTH 2.80 m BREADTH 0.70 m DEPTH 2.95 m WATER LEVEL Dry m FILL LEVEL 2.15 m</p> <p>V_{p75-25} 0.78 m³ a_{p50} 4.76 m² t_{p75-25} 47 min</p> <p>soil infiltration rate, f 5.8×10^{-5} ms⁻¹</p>	<table border="1"> <caption>Data for Test 2 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>2.15</td></tr> <tr><td>2</td><td>2.25</td></tr> <tr><td>5</td><td>2.35</td></tr> <tr><td>10</td><td>2.45</td></tr> <tr><td>15</td><td>2.50</td></tr> <tr><td>20</td><td>2.55</td></tr> <tr><td>40</td><td>2.65</td></tr> <tr><td>60</td><td>2.80</td></tr> <tr><td>75</td><td>2.95</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	2.15	2	2.25	5	2.35	10	2.45	15	2.50	20	2.55	40	2.65	60	2.80	75	2.95
Time (minutes)	Depth to water (m)																				
0	2.15																				
2	2.25																				
5	2.35																				
10	2.45																				
15	2.50																				
20	2.55																				
40	2.65																				
60	2.80																				
75	2.95																				
<p>TEST 3</p> <p>LENGTH 2.80 m BREADTH 0.70 m DEPTH 2.95 m WATER LEVEL Dry m FILL LEVEL 2.00 m</p> <p>V_{p75-25} 0.931 m³ a_{p50} 5.290 m² t_{p75-25} 42 min</p> <p>soil infiltration rate, f 7.0×10^{-5} ms⁻¹</p>	<table border="1"> <caption>Data for Test 3 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>2.00</td></tr> <tr><td>2</td><td>2.10</td></tr> <tr><td>5</td><td>2.20</td></tr> <tr><td>10</td><td>2.35</td></tr> <tr><td>15</td><td>2.45</td></tr> <tr><td>20</td><td>2.60</td></tr> <tr><td>40</td><td>2.65</td></tr> <tr><td>60</td><td>2.80</td></tr> <tr><td>75</td><td>2.95</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	2.00	2	2.10	5	2.20	10	2.35	15	2.45	20	2.60	40	2.65	60	2.80	75	2.95
Time (minutes)	Depth to water (m)																				
0	2.00																				
2	2.10																				
5	2.20																				
10	2.35																				
15	2.45																				
20	2.60																				
40	2.65																				
60	2.80																				
75	2.95																				
<p>Remarks Test carried out in general accordance with BRE 365 (2007).</p>	<p>CONTRACT 31634</p>	<p>CHECKED</p>																			

06/960